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VIEW FROM THE BRIDGE

What's in a name? In the case of the one we used for our first six issues—too many syllables! *Ahoy!'s AmigaUser* was such a mouthful that everyone except us was already referring to the magazine as simply *AmigaUser*—so we decided to make the change official. That extra word was only there to let readers of *Ahoy!* know that *AmigaUser* was produced by the same staff as their favorite Commodore 64/128 magazine. Now that the word is out—the word is out!

And with the time we saved by cutting those two syllables out of every phone conversation we've had this month, we've been able to put together an extra special March issue of *AmigaUser:*

• *Graphic Editor* is perhaps the most significant program we've published to date. All Amiga programmers will want to take advantage of the control Matt Childress' routine provides over BOBs and sprites. (Turn to page 66.)

• You've read the ads for video-related Amiga products, in which the manufacturers claim that the Amiga is revolutionizing fields like animation, advertising, and TV broadcasting. Is it all just promotion, or is the Amiga really muscling its way in among dedicated video machines costing many thousands of dollars? To find out, Richard Herring interviewed top professionals, and reports his findings in *Amiga Video: Having Fun at Making a Creative Living.* (Turn to page 28.)

All *AmigaUser* programs from the May '88 through February '89 issues are available on the *AmigaUser* Program Disk, Volume 1. See page 37.

• Like us, you've probably been disappointed in both the quality and the quantity of the Amiga educational software released to date. But Bob Spirko has done something about it—written an expandable Amiga BASIC program that will help you build your vocabulary. Want to get better grades? Win that promotion? Stop boring people to death at cocktail parties? It all starts with becoming a *Word Master!* (Turn to page 39.)

• The good news is that your Amiga lets you store 880K on a single 3½" disk—almost five times what you could fit on a C-64 floppy. The bad news is that you can wind up with a collection of files five times as disordered as before. In this month's *Eye on CLI,* Richard Herring teaches you to steer clear of trouble by *Navigating Your Disk* in an ordered manner. (Turn to page 46.)

• The arrival of the Bridgeboard (for the A2000) and the various IBM software emulators has widened the Amiga owner's software options. But the world of MS-DOS compatible software is like a jungle to the Amiga's potted plant. Here to swing the machete for you is Ted Salamone, highlighting some worthwhile IBM-compatible packages in this month's *MS-DOS Meets AmigaDOS.* (Turn to page 15.)

• Many of you have written in praise of Arnie Katz, Bill Kunkel, and Joyce Worley's game reviews. With their many years of experience, it's hardly surprising that you find their analyses the most authoritative in the Amiga field. In response to your requests, we're going to be increasing entertainment coverage in future issues. For this month, the above-named team has reviewed *Final Mission, Operation: Cleanstreets, Robbeary,* and *4 x 4 Off-Road Racing.* (Turn to page 20.)

• Our regular (non-game) *Reviews* section hasn't given us any cause for embarrassment, either. This month's lineup includes *MovieSetter, Professional DataRetrieve, Microfiche Filer Plus,* and the Star NX1000 Rainbow printer. (Turn to page 54.)

You'll find a lot more inside. Though our page count is not yet as high as we want it to be (and as it's going to be), we pride ourselves on squeezing as much top-quality material as we can into each issue. (Another good reason for shortening our name—it should save a column inch or two per month!) *—David Allikas*

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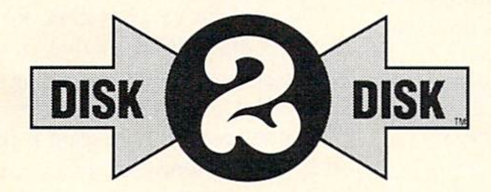
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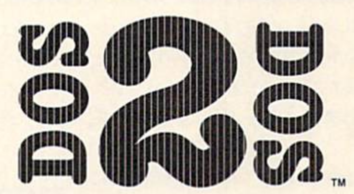
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WORLD RECORD

Attendance at Toronto's sixth annual World of Commodore show, held December 1-4, drew over 43,300 attendees, surpassing the record of 42,000 set in 1987. While software and peripherals for all Commodore models was on display, the Amiga dominated the selling floor, the seminars, and the stage presentations. We thank the many readers who stopped by the *AmigaUser* booth to meet Executive Editor Michael R. Davila and programmer Paul Maioriello. As for those who didn't, you'll get another chance at the next W of C, scheduled for May 19-21 in Los Angeles.

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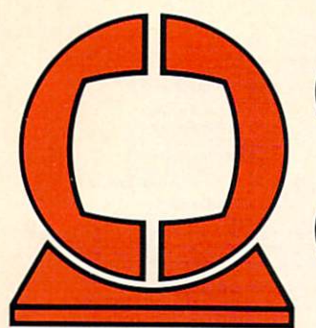
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Commodore's large hands-on exhibit occupied one end of December's World of Commodore, while the rest of the Toronto International Centre was taken up by over 100 third party manufacturers, retailers, and distributors.



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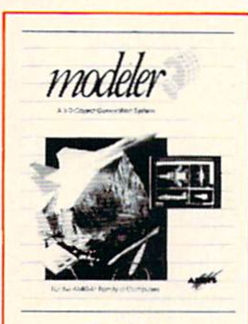
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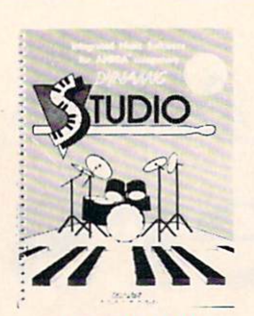
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Oxxi, 213-427-1227 (see address list, page 14).

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'89 AMIEXPOS

Final dates and locations have been set for all three 1989 AmiEXPOs. AmiEXPO-New York, as reported earlier, will take place March 3-5 at the Marriott Marquis. AmiEXPO-Midwest occurs July 28-30 at Chicago's Hyatt Regency. And AmiEXPO-California, like, happens October 20-22 at the Santa Clara Convention Center.

AmiEXPO, 800-32-AMIGA or 212-867-4663 (see address list, page 14).

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COLOR DISKS & CONTEST

Kodak has released a line of 3½" diskettes in five colors—red, yellow, orange, blue, and green. Each 10-pack contains two double-sided, double-density disks of each color, allowing users to color-code their disks according to application or any other criterion. Suggested list price of the 10-pack is $31.50.

And beginning in February, boxes of Kodak diskettes featuring a red, white, and blue "Bytes & Bonds" sticker will contain an instant-winner game offering more than $120,000 in U.S. Savings Bonds, including a grand prize of a $10,000 bond.

Verbatim News Services, 716-724-5130 (see address list, page 14).

Circle #225 on Reader Service Card

ANIMATION CONTEST

$1000 in Amiga software will be awarded to the winner of the Mindware International Amiga Animation Competition. Amateurs and professionals are invited to submit Amiga animations that run under Mindware's *PageFlipper, PageFlipper Plus F/X,* or *PlayPFX* by March 1, 1989, with the winner to be announced at March's AmiEXPO in New York. Prizes will be awarded in four categories: commercial or noncommercial in over 20 seconds and in 20 seconds or less. The two winning 20-second-plus animators will each receive a gift certificate worth $1000 in software; the under 20 second winners, $750 certificates. Second place winners in each of the four categories will receive a complete animation system from Mindware.

Mindware, 705-737-5998 (see address list, page 14).

Circle #226 on Reader Service Card

DOS-3-DOS 3

Version 3.0 of *DOS-2-DOS*, the IBM-Amiga file transfer utility, permits access to any MS-DOS volume available via AmigaDOS, including MS-DOS partitions on hard disks and MS-DOS volumes on LANS or SCSI networks. The program now supports wild card deletes for both AmigaDOS files and MS-DOS files, an option is available to force AmigaDOS file names to lower case, and files transferred to AmigaDOS will now retain the MS-DOS date/time stamp. *DOS-2-DOS V3.0* also works with the 68020 accelerator boards, supports 80-track 5.25" drives, runs with Workbench or CLI, and opens its own window. If you bought a previous version of the program prior to Sept. 1, 1988, you can upgrade at no charge by sending Central Coast your master disk plus your purchase invoice. Registered owners who bought the program prior to that date must send their master disk plus $15.00.

Central Coast Software, 805-528-4906 (see address list, page 14).

Circle #222 on Reader Service Card

MINDWARE BBS

Mindware has set up a BBS to provide owners of *PageFlipper Plus F/X* and *PageRender 3D* with instant product updates, technical support, utilities, online conferencing, and data exchange with other users. Registered owners can access the board at no charge by calling 705-737-5017 (modem required). Voice support remains available at 705-737-5998.

Mindware, 705-737-5998 (see address list, page 14).

Circle #221 on Reader Service Card

GAMES

Newly adapted to the Amiga, *Rebel Charge at Chickamauga* ($59.95) uses a refined version of the game system of *Gettysburg: The Turning Point*. All units are now brigade size and can be broken down into demi-brigades, then built up. Command control can be altered by the player(s), and turns now represent two hours instead of one. The entire two day battle is recreated in 13 turns. Strategic and tactical screen displays are available, the strategic display showing 40 by 20 squares while the tactical display lets the player zoom in for a detailed view. Introductory, intermediate, and advanced versions of the game are included.

Strategic Simulations, Inc., 415-964-1353 (see address list, page 14).

Circle #227 on Reader Service Card

Pay close attention now—the following four games were designed by Britain's Personal Software Services, have been licensed by Datasoft, and will be distributed by Electronic Arts:

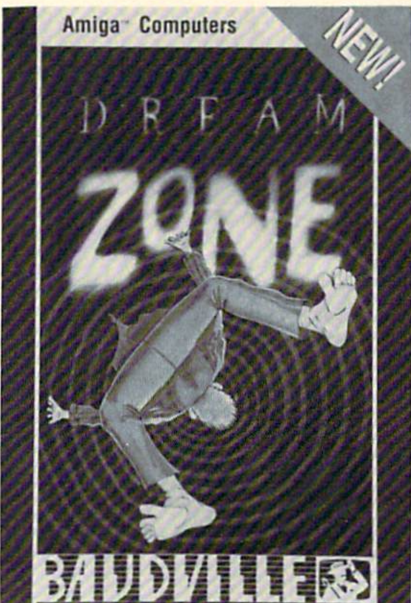
Firezone ($34.95) takes place in 2160, with the Earth fragmented into four hostile Power Blocks. Battles between

Don't be fooled by our black and white reproduction—the new Kodak disks shown here actually do come in bright red, yellow, orange, blue, and green, enabling you to color-code.

the Blocks are fought in close support campaigns called Firezones which involve the latest propulsion systems, beam weapons, and energy shields. Combat takes place over realistic terrain that includes urban areas, marshes, ruins, and woods. Nine separate campaigns of varying difficulty and length are included.

Annals of Rome ($34.95), a strategy game, takes you from the consolidation of Rome as a state in 273 BC to the sacking of the city in 410 AD, and several centuries beyond. Under your command, the Empire can go on indefinitely, or end long before it was supposed to. You deploy armies to conquer new territories and defend against hostile Carthaginians, Huns, Vandals, and Goths, or to ward off traitors within Rome itself. Features include a detailed map, phased movement, and economic and political options.

Designed to be the most advanced strategy game available for a home computer, *The Android Decision* is an icon-operated battle simulator that pits you against your own hostile computer.



Sleepwalk through over 100 locales.

Combining elements of fantasy role-playing with the strategies of war gaming, *Sorcerer Lord* requires you to lead mortals against the Shadow Lord, who plans to invade the lands of Galanor and seize the enchanted Rune Ring stones. You'll need strength, political skill, and courage to defeat the Shadow Lord's armies of Wolf Riders.

Electronic Arts, 415-571-7171 (see address list, page 14).
Circle #228 on Reader Service Card

Dream Zone ($49.95) casts the player as a prisoner of his own dreams, with over 100 locales to explore. You converse with people, animals, and other things by typing plain English commands, or clicking objects and action icons with a mouse. Logic, imagination, persistence, and sense of humor are required to locate and overcome the source of the nightmare.

Baudville, 616-698-0888 (see address list, page 14).
Circle #231 on Reader Service Card

Captain Fizz Meets the Blaster-Trons is played simultaneously by two contestants, who must collaborate in order to survive the 22 levels of play and win. This collaborating includes planning a strategy, watching your partner's back, and perhaps sacrificing your own life so that your fellow player can go on to victory.

Psygnosis (see address list, page 14).
Circle #229 on Reader Service Card

More details about three Konami games mentioned by name only in January's *Scuttlebutt:*

The Adventures of Bayou Billy involve rescuing your girl from the Gangster King of Bourbon Street. As Billy, you zap monsters, wrestle alligators, and drive your "doom" buggy through the Louisiana swamps and into the streets of New Orleans in search of Annabelle. The chase ends with a battle inside the Gangster King's heavily fortified estate. Available at press time.

Jackal sends you on a mission to rescue your brothers-in-arms, who are being held hostage. You'll roll across enemy lines in the army's advanced all-terrain attack jeep, filled with guided missiles and grenades. Available by early 1989.

Blades of Steel is no Olympic hockey simulation—when tempers flare, the gloves come off and the sticks go flying, just like in the pros. You can play against a friend or the computer. Available in fall '89.

Konami Inc., 312-595-1443 (see address list, page 14).
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From MicroDeal:

Turbo Trax ($39.95) lets you design up to eight full screens of race track, with sections including chicanes, crossovers, switch tracks, pits, oil, and rough hazards. You can also choose from 8 different cars, 4 difficulty levels, 99 track variations, and wet or dry track options. Watching factors like tire and oil pressure, suspension, and fuel level is as vital to success as outmaneuvering your opponents.

The Evil Wizard has turned you into an *Airball,* bouncing through a mansion of over 300 rooms. Your only chance is to find the spellbook with the magic incantation that will turn you human again. Obstacles include the spikes of every shape and size that fill the rooms, a slow leak that requires you constantly to search for rooms with air pumps, and sticky patches on the floor that can tear holes in your hide.

MicroDeal, 313-334-5700 (see address list, page 14).
Circle #238 on Reader Service Card

From Mindscape:

In *Hostage* ($44.95), players control a six-man special forces team assigned to rescue prisoners held by terrorists at an embassy. Action is viewed from overhead, from inside and outside the embassy. Time limits and difficulty levels can be varied.

Combat Course ($39.95) exposes players to the rigors of military training. A "build your own obstacle course" option is included.

In *After Burner* ($49.95), you pilot an F-14 Tom Cat through assorted rescue missions, controlling air speed, flight direction, and weapon selection. Your weapons include guided missiles, a Vulcan cannon, and a state of the art battle computer.

In *Shinobi* ($49.95) you, a mild-mannered martial arts instructor, turn into the master Ninja to save the children of the world's leaders from a terrorist network. Five rescue missions are included, each ending in a confrontation with the Master Force.

Action Fighter ($39.95) sends you, the Super Rider, on five air and ground missions. You're on a motorcycle, but can transform it to a customized car or aircraft if you find the right parts along the road.

Deja Vu II: Lost in Las Vegas ($49.95), an interactive graphic adventure, starts you off in the bathroom of a cheap hotel, having been abducted by thugs. Your task is to raise the money to pay off your $100,000 debt to mobster Tony Malone within seven days, or else.

Mindscape, 312-480-7667 (see address list, page 14).
Circle #245 on Reader Service Card

Galactic Conqueror ($44.95) combines elements of arcade action and computer game strategy. The surveillance units of Gallion, headquarters of the stellar league for the preservation of mankind, have detected an enemy invasion. You, the Betadroid KAL,

Continued on page 36

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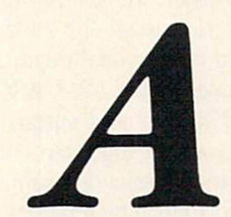
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MS-DOS MEETS AMIGADOS

Part IV: Software Compatibility & Review



By Ted Salamone



Now that we've looked at MS-DOS hardware and operating system software, it's time to look into, and test the compatibility of, MS-DOS software running under AmigaDOS.

The software was selected for review on two criteria: uniqueness and affordability. While there is relatively plenty of software for the Amiga, there are still neglected areas. Some of these MS-DOS titles fill those gaps. Others represent a certain level of cost effectiveness, akin to that offered by most Amiga software. (Remember, the major MS-DOS software packages carry stiff price tags–e.g., $495.00 list for Lotus' *Freelance Plus* graphics package, $495.00 for *Harvard Graphics*, and a similarly astronomical price for Microsoft's *Excel* spreadsheet.)

Of course, there are price-sensitive MS-DOS owners as well; so those are (primarily) the packages tested. Speaking of tests, don't expect benchmarks with weighted algorithm scores. The following programs were tested through everyday use on a 3 meg Amiga 2000 with a Bridgeboard, an MS-DOS 5.25" floppy, an Amiga 1010 3.5" floppy, and two 20 meg hard drives–one Amiga, one MS-DOS. The monitor was standard Amiga issue, the 1084, while the printer, more often than not, was an IBM Proprinter XL.

Except for copy protected titles, the software was installed on the hard drive for faster performance and ease of use. (If copy protected, but equipped with a hard drive install routine, the routine was used.)

Just some final comments before we talk software. First, the Bridgeboard does not have a speaker. MS-DOS computers do. Therefore, the tinny beeps which normally issue from MS-DOS software were not to be heard. This can be a problem, as some titles have audible prompts for different functions. While this may be an issue of personal preference to some (those who turn off the audio), it is an all-round lack of compatibility and should be noted as such.

Second, there is the port issue. While the Amiga parallel port can be used by MS-DOS, the same cannot be said for the serial port. To use a modem, serial printer, plotter, etc. with MS-DOS software, you must install a compatible serial or asynchronous card in one of the MS-DOS slots. From there, it's a matter of setting parameters according to the particular software or hardware.

Last comes the mouse. These MS-DOS titles do not recognize the Amiga mouse. (At least not completely; there was a little "bleed through" by one or two of the applications.) To use a mouse with MS-DOS software designed for the little rodent, you must install an MS-DOS-specific mouse and driver software (if the application does not provide same). This may involve a serial port or a bus mouse card. Either way, you'll use another slot.

BUSINESS AS USUAL

Ashton-Tate provides *Chart-Master,* an unprotected, mid-to-small size, business-oriented, data-driven charting program which imports *Lotus 1-2-3* ASCII, *dBASE* .DIF, and *Multiplan* SYLK files. Long a favorite in corporate environments, *Chart-Master* supports over 130 output devices including black and white and color dot matrix printers, laser printers, film recorders, slide services, and color plotters and thermal printers.

A real workhorse, with batch production to screen or printer/plotter, *CM* offers bar, stacked bar (vertical or horizontal), pie, exploded pie, proportional pie, area, scatter, line, mixed, and high-low-close charts. 94 business symbols, 7 fonts, multiple type sizes, 8 hatch patterns, and 8 line patterns are standard. Up to 600 observations can be tied to a single variable. Up to 24 variables can be entered, displayed, and manipulated.

A special *Chart-Bridge* utility comes standard with *dBASE IV,* allowing *dBASE* users an easy way to take reams of data and easily convert it into instant analysis charts within *Chart-Master.*

Another unprotected A-T entry, *Diagram-Master,* works its magic with automatic organization charts, GANTT charts, VENN diagrams, flow charts, and any other form of diagram you can visualize. Its flexibility comes from having the same output devices and symbols as *Chart-Master*, an additional library of over 100 business clip art drawings, and a full-featured drawing table.

Also non copy protected, *Sign-Master* from Ashton-Tate

creates free form or table mode word charts for business, educational, and home use. *Sign-Master* is also sold with *Chart-Master* and *Diagram-Master* in the Master Graphics Presentation Pack bundle.

Like the other two, *SM* shares the same font types, color palettes and symbols, etc. All three are driven by guided menus, making them incredibly easy to learn and use. The speed with which these programs create, modify, and output presentation quality graphics earns them a home anywhere, productivity being their forte.

Map-Master, the last in the series, is a data-driven mapping program ideal for advertising, marketing, research, sales, and educational departments and firms. With it users can take *Lotus 1-2-3* ASCII, *dBASE* .DIF, and *Multiplan* SYLK files and automatically tie them to US state, county, 3 and 5 digit zip code maps.

Companies projecting sales forecasts by region, showing past performance by territory, or doing site location analysis can tie their own figures, or provided demographic and census data, to any map boundary.

Maps can be customized with floating legends and labels using the same fonts and colors in the other Master programs, output to the same myriad devices, zoomed, exploded, aggregated, and otherwise customized.

Map Packs, optional collections of additional boundary and statistical files, cover the entire US by Area of Dominant Influence, zip codes, Designated Market Areas, and Metropolitan Statistical Areas.

Bank Street Writer Plus from Broderbund, in its many versions, is one of the best selling entry level word processors. Perfect for students (notes, term papers, etc.) or a small office (memos, short letters, etc.), this non copy protected title works smoothly and efficiently.

Pulldown menu driven, with an online tutorial and prompt messages, *BSWP* stresses ease of use. Its easy to follow nature is backed by an average to above average feature set. (Keyboard aficianados can also use the key command equivalents if they so desire.)

Despite the pulldowns, *BSWP* does not support a mouse. It does, however, provide a way to record and tie 40 macros to the function keys (F1 through F10 with ALT, CTRL, and SHIFT as predecessors). Other features include a 60,000 word spell checker and a thesaurus. Users can create custom dictionaries.

Normal editing functions are covered (move, copy, erase, undo, find, etc.), foreign characters can be input, and font attributes (boldface, underline, etc.) can be output.

Amenities include a limited ability to access DOS from within the program and inclusion of 3.5" and 5.25" disks in the package.

Next comes *Word Writer PC* by Timeworks. While *WWPC* is a standalone product, it interfaces smoothly with its companion products *(SwiftCalc PC* and *DATA Manager PC)*.

A step or two above *BSWP* in functionality, *WWPC* also has a higher price. Unprotected, it comes on 5.25" media, with a special offer for 3.5" disks.

Word Writer reads *Lotus 1-2-3* files and packs a 90,000 word spell checker, an integrated outliner, and an integrated thesaurus with 60,000 key words. Users can also create a custom dictionary. Like *BSWP*, it provides an instant access calculator and does not support a mouse for the pulldown menus.

The function keys are preprogrammed to perform major tasks such as alignment, indentation, and copy/undo. The display shows underline, boldface, and other attributes in a somewhat WYSIWYG manner. Form letters, document appends, and document chains are supported.

Overall, *Word Writer PC* performs yeoman service with little fuss or bother. It's ideal for small businesses and high school and college level students.

SwiftCalc PC, the spreadsheet entry from Timeworks, shares *Word Writer's* look and feel, its unprotected status, its online Help screens, its optional 3.5" disk offer, and a healthy cost effectiveness. It does not support a mouse.

Sideways, a routine that allows you to print wide worksheets lengthwise across multiple formfed sheets, is included. *SCPC* also offers "Super Graphics," enhanced data graphing and charting capabilities for instant analysis of huge gobs of information. (One gob equals 10K.)

Up to 250 rows and 250 columns can be used (theoretically anyway), accuracy is good to 16 digits, and present/future value of a dollar and annuities are supported. Other functions include min/max, averages, sums, exponential notation, absolutes, and integers. Logical operators include <, >, =, <>, <=, >=, If, Then, Else, and Stop.

Once again, function keys are preprogrammed. Cursor movement, a critical spreadsheet issue, is very comprehensive. To sum it up, *SwiftCalc PC* is an adequate entry level spreadsheet.

Another Timeworks entry, *Data Manager PC*, rounds out their trio of interfacing-yet-standalone products. Very similar to its stablemates in concept, design, and execution, *DMPC* provides password security protection, a specific label making ability, graphics output (basic line, pie, and bar charts), and a fairly powerful report writer—all standard!

The search and sort functions are more than adequate, including manipulation of data subsets. Increasing and decreasing numeric, alphabetic, and chronologic order are supported. Other manipulation features encompass the ability to retrieve and output prepared data with a single keystroke.

Output can be previewed before printing; mathematical operations can be performed across columns or fields; and databases and reports can be customized. Add *Word Writer* to perform form letter mail merges automatically.

Like *SwiftCalc PC, Data Manger* is a solid entry level product.

Two integrated packages were tested as well. The first is Spinnaker's *Better Working Eight-in-One*. It includes

Continued on page 74

For more information on products mentioned in this article, contact the appropriate companies directly:

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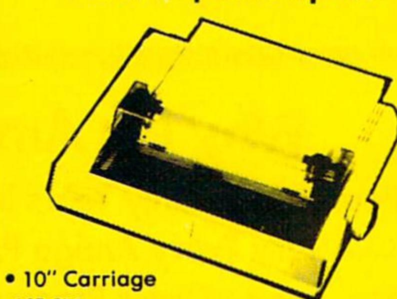
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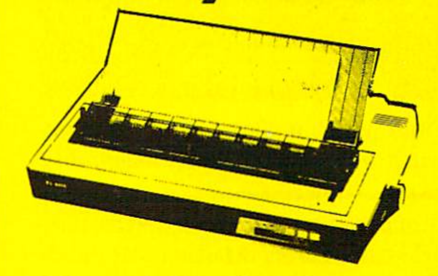
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Circle #240 on Reader Service Card





Despite the illusion of depth in the playfield of **Operation: Cleanstreets,** *movement into the background or foreground is limited.*

OPERATION: CLEANSTREETS
Broderbund
Amiga with 512K
Disk; $39.95

How much you enjoy the role of undercover cop Cleanup Harry largely depends on whether you like karate fights. It is dressed up with impressive graphics and an imaginative plot, but *Operation: Cleanstreets* boils down to lots of punches and kicks.

The solitaire gamer employs either keyboard order entry or, preferably, a joystick to orchestrate the moving and fighting. As Cleanup Harry, the player embarks on a one-man war against a gang which has infested one of several seedy neighborhoods.

Prior to the actual start of play, a utility screen lets the computerist customize some of the game's parameters. The user can view a lengthy demonstration, see the high score for the current session, toggle between joystick and keyboard control, or adjust the difficulty. Only one thug attacks at a time at Level #1, but Harry must combat multiple assailants at the tougher settings.

The playfield presents a modified side view of the neighborhood in which Cleanup Harry must battle crime. Despite the illusion of depth, movement into the background or foreground is very limited. When Cleanup Harry reaches the left or right edge of the display, the next section of the street appears.

The rendition of the neighborhood is outstanding. The multiscreen playfield has superbly detailed backgrounds. The atmospheric drawings are enlivened with numerous bits of animation.



Final Mission *shows solid programming, but not very much originality.*

The drawing and animation for Cleanup Harry is also flawless, but the character is always shown in side perspective. Even when moving toward the background, Harry simply sidesteps to the new position instead of changing his current facing. It looks strange at first, but the lush visuals offer the eye some compensation.

The villains are a motley assortment of criminals, many of them armed. Knives, chainsaws, and baseball bats are only a few of the lethal weapons which menace the one-man police squad.

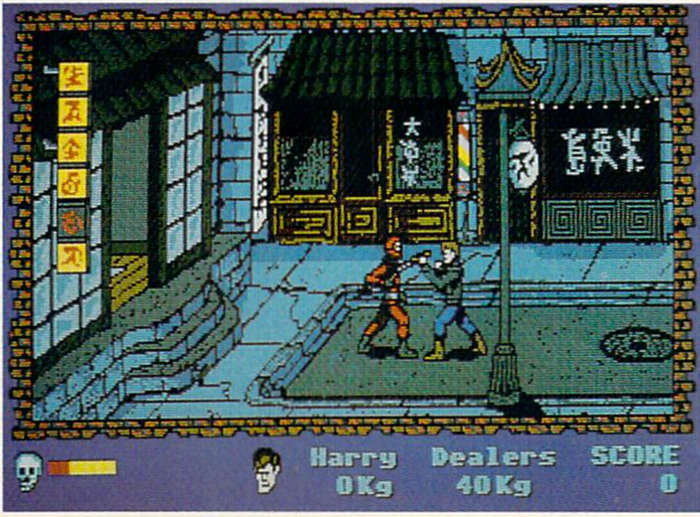
When Harry defeats a dealer in hand-to-hand combat, he must search the body for contraband. The goal is to collect all of the illegal substance and throw it into the fire at the extreme right end of the multiscreen playfield.

A status area located at the bottom of the screen tracks how many dealers Harry has put out of business, the weight of seized material he is currently carrying, the amount of stuff still in the hands of the deaders, and the score.

The documentation suggests that Cleanup Harry is fighting against street level drug dealing. The fact that the goods are measured in kilos would seem to support this.

Someone on the development team must have blinked, because Harry isn't necessarily smashing drug rings in the actual game. The two-fisted police officer may end up chasing sellers of cigarettes, caffeinated beverages, or something even more innocuous. That seems

The villains of **Operation: Cleanstreets** *come armed with knives, chainsaws, and other lethal weapons. When Harry defeats a dealer, he must search the body for contraband.*



like a meaningless equivocation.

Operation: Cleanstreets looks great, but its content doesn't measure up to the graphics. The story beats by a mile the "rescue the Princess from the castle" plotline found in most martial arts games, but it isn't enough. The design still seems thin.

A more intricate background with increased strategic possibilities might have made *Operation: Cleanstreets* more suitable for a wider audience. As it is, this title's appeal is mainly to action-combat fans.

Broderbund, Inc., 17 Paul Dr., San Rafael, CA 94903-2101 (phone: 415-492-3500). *—Arnie Katz*

Circle #204 on Reader Service Card

FINAL MISSION

DigiTek
Amiga with 512K
Disk; $34.95

Climbing and jumping action take center stage in *Final Mission*, another entertainment software import from this promising newer publisher. Like many games invented abroad, *Final Mission* shows little originality of theme or play-mechanic; but solid programming, attractive artwork, and lots of varied action make *Final Mission* surprisingly appealing for joystick jockeys.

The inept documentation describes the concept of *Final Mission* with the same perfunctory indifference with which it explains the actual rules of the game. Perhaps devoting any space to this banal plot is overkill. The details will blur in memory five seconds after reading the skimpy synopsis, because the story lacks distinguishing elements.

The computerist assumes the role of a highly trained warrior who must enter the labyrinth of terror and collect "the red plates of madness and the yellow balls of insanity."

The character has a weapon, inexplicably called a $2x10^3$ calibre game gun, but its use is curiously limited. The adventurer can vaporize impeding wall or floor blocks, but it is impossible to fire at the monsters of the maze.

Next month's game reviews:

- **Hybris**
- **Virus**
- **Sword of Sodan**
- **Warlock**

Touching gun-shaped icons on the multiscreen playfield adds bullets to the ammunition supply.

The playfield shows one portion of the mega-maze in side perspective. When the player reaches the edge of the current screen, the adjoining one replaces it on the monitor.

A status line located directly below the active display tracks the computerist's current score, number of keys, and remaining lives, and includes a horizontal energy bar and a counter for "F" symbols which starts at 208 and declines toward zero.

What do the little F's mean? The rules flyer is silent on this point, as it is about so many others. They appear to be units of fuel which replenish energy expended by the character during movement.

The maze is constructed of horizontal slabs of brick and rock, connected by red ladders. Teleportation stations allow even faster transit. If the character is positioned over the teleporter, pushing the joystick to the 12:00 position initiates instantaneous movement.

The little bonus objects don't just sit on the platforms waiting for the character to scoop them up. Most hang in midair and require some maneuvering to reach. For an unstated reason, some symbols have anti-gravity rays which levitate the character off the bricks and draw him to the symbol. Jumping to the left or right negates the effect of this beam.

The anti-gravity beams also offer a way to avoid the monsters who patrol the maze. Led by the dreaded Kyboter robot, these nasties steal one of the hero's three precious lives with a single touch.

Also lethal are energy drains. If one catches a character who looks before he leaps, it can reduce him to a skeleton in seconds. The really nasty thing is that the player must react quickly when the screen resets after an energy drain, or the same device will instantly claim another life!

The onscreen hero, also depicted from the side, can walk, somersault to the left and right, or safely fall any distance. There are places in *Final Mission* where the character can plummet several screens before landing unharmed on a row of bricks.

The character is well-drawn and his moves are smoothly animated on the screen. The monsters are less impressive as they slide along the platforms, but they are more than satisfactory.

Final Mission is certainly no worse than two dozen other climbing and jumping games, and it can deliver hours of action-oriented entertainment. It is equally true to say that *Final Mission* is no better than the same two dozen titles. In the final analysis, the question is how much the prospective buyer likes this genre.

DigiTek, Inc., 10415 N. Florida Ave., Suite 410, Tampa, FL 33612 (phone: 813-933-8023). *—Arnie Katz*

Circle #205 on Reader Service Card

4 X 4 OFF-ROAD RACING

Epyx
Amiga with 512K
Disk; $49.95

Publishers of computer games have "built" more miles of road in the last year than all the nations of the world combined. Driving games predate the electronic gaming revolution by many decades, and car contests have remained continuously popular since the days of *Night Driver, Baja Buggies,* and the classic *Pole Position.*

4 x 4 Off-Road Racing is one of a new wave of vehicular games which add novel elements to the standard hairpin curves and computer-controlled competitors.

This one-player action title leaves the sleek racers and roaring motorcycles back in the garage. Instead, the player must demonstrate ability to handle a rugged truck over some truly formidable terrain.

Baja, Death Valley, Georgia, and Michigan are the four courses included on the *4 x 4* game disk. The choice of courses affects more than the type of scenery the user sees along the horizon. The driver must analyze each course and outfit the truck properly to avoid costly breakdowns on the road. Baja tortures trucks with gigantic boulders; Death Valley adds shimmering heat; Georgia introduces mile upon mile of sloppy mud; and Michigan is a nightmare of snow, ice, mud, and cold.

The four trucks available to players of *4 x 4 Off-Road Racing* have different strengths and weaknesses, which make each most suitable for a particu-

lar combination of terrain and temperature. The program rates the Stormtrooper, Tarantula, Highlander, and Katana for power, weight, gas consumption, durability, ease of repair, cargo limits with and without a camper top, and the capacity of the fuel tank.

The program allows the user to compete at four levels of difficulty. The well-organized rule book advises players to start at "Beginner," because it skips the intricate outfitting phase and endows the truck with unnatural endurance. "Semi-pro" is considered the standard level, while "professional" is only suitable for the best and most experienced drivers.

The two retailers on auto parts row help the player get ready for the actual race. For basic supplies like oil, water, coolant, transmission fluid, batteries, spare tires, repair tools, and a map, the driver can visit the Auto Mart. The Custom Shop carries three grades of tires, winches, extra-capacity fuel tanks, and camper bodies.

Although the documentation recommends a joystick, *4 x 4 Off-Road Racing* can be played using the mouse or keyboard order entry, too. The driver works the joystick from side to side to keep the truck on the vertically scrolling course. Pulling the stick to 12:00 brings the vehicle to a gradual stop, while yanking it back to 6:00 simulates hard braking. The action button serves as the gas pedal.

The game is a race as well as an obstacle course. The other 4 x 4s fight hard to prevent being passed, and they are quick to take advantage of lengthy pitstops. Worse than all other foes combined is the Doombuggy. This demonic rival relentlessly tries to run the player's truck off the road and make it crash.

The faster the truck is traveling when it hits something, the more devastating the damage. As a result, the player must balance velocity against steering accuracy, or see miles gained with the gas pedal lost while filling the gas tank and fixing damaged equipment.

High speeds also exhaust the fuel more rapidly than a more moderate pace. Even though trucks carry extra cans of gas, maintaining top speed can leave the player's machine stranded by the side of the road.

Car crashes are always an important part of driving games. The trucks' gyrations leave no doubt in the player's mind that this vehicle is not a Lotus or a Corvette. The way the truck flips into the air after hitting a rock, rolls end over end, lands, and then resumes careening really reinforces the rough-riding theme.

Owning other automotive contests is no reason to skip *4 x 4 Off-Road Racing*. Its all-terrain action is sure to please electronic drivers.

Epyx, 600 Galveston Drive, P.O. Box 8020, Redwood City, CA 94063 (phone: 415-366-0606).

—Arnie Katz & Bill Kunkel

Circle #206 on Reader Service Card

ROBBEARY
Anco
Amiga with 512K
Disk; $24.95

Patrick Baroni's lighthearted action title harks back to a simpler era of electronic gaming. The theme is more like a children's bedtime story than a rigorously logical background. This British game radiates such irresistible charm, however, that most players won't really care if the story is not watertight.

The 24 floors of the Store are the goal of Bertie Bear, who is under the player's joystick control. The ursine hero looks more like a Saturday morning cartoon character, but his heart is full of larceny.

Bertie must run, jump, and climb around each of the floors, which are shown in side perspective, gathering the fruit lying on the horizontal shelves.

The character is delightfully drawn and animated. Author Baroni takes a leaf from *Boulder Dash* (First Star) by giving Bertie a lot of cute mannerisms. Like Rockford, he taps his foot impatiently when nothing is happening and waves at the screen to get the gamer's attention.

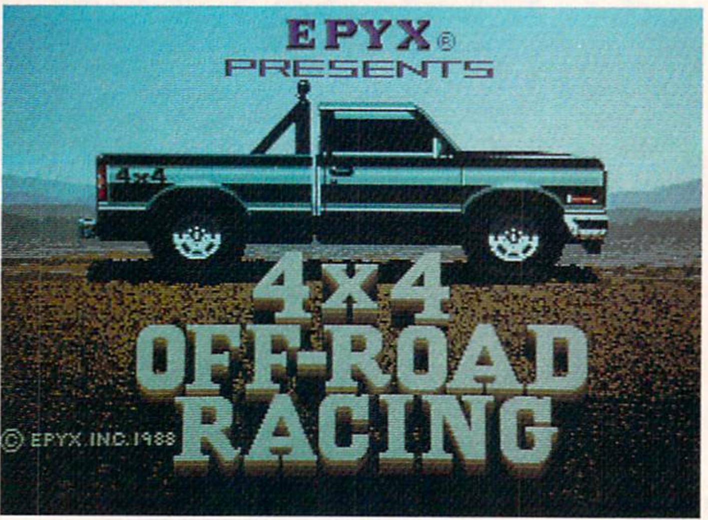
Moving the joystick to the left and right walks Bertie in the corresponding direction on the screen. Pushing the action button lets Bertie leap high enough to reach the shelf immediately above the one on which he is standing. Ladders also connect some shelves. The fruit-stealing felon can also drop through a gap in a shelf to reach a lower portion of the current playfield.

There are openings at the bottom of each screen. If Bertie Bear falls through one of these gaps, he lands on the top shelf of the same floor of the Store.

Guards roam the shelves ceaselessly, speeding up as time passes. Each floor of the Store has its own cadre of defenders, and they look almost as cute as the bear. If they touch Bertie, it costs the larcenous bruin one of the three lives with which he began the game.

Each fruit and berry is quite large, as are the symbols for the many bonus icons which pop into view as Bertie clears the shelves. This makes *Robbeary* warmer and more inviting than games which utilize tinier drawings. Objects fill most of the screen, minimizing the visual impact of the plain black background.

Keys are especially valuable. The gray key opens a treasure chest that fills the playfield with jewels, the green key opens a second door for bonus points, and the gold key opens the door to the next floor of the Store immediately. Otherwise, Bertie Bear must collect all the fruit before the key, and then the door, become visible.



4 x 4 Off Road Racing *is one of a new wave of vehicular games which add novel elements to the standard hairpin curves and computerized competitors.*

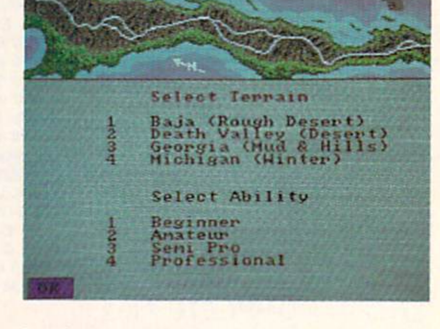
Several objects transform the deadly guards into treasures. The candle stick turns them into diamonds, the magic ring makes them into jewels, and the cross allows Bertie to turn the tables on his tormentors. He becomes invulnerable for a short period of time, during which he turns every guard he touches into an edible cupcake.

If Bertie Bear finds a stop watch, the guards pause in place for a few seconds, but a gray crystal doubles the creatures' speed. The robber gets a similar benefit from a green crystal.

Superimposing the scoring information on the active display instead of putting it at the top or bottom of the screen detracts from the program's attractiveness. The information is a little hard to read, and sometimes obscures important areas of the playfield.

It is also slightly annoying that auxiliary screens, including the credits and the high score, cycle through a little too rapidly.

Robbeary doesn't have much music,



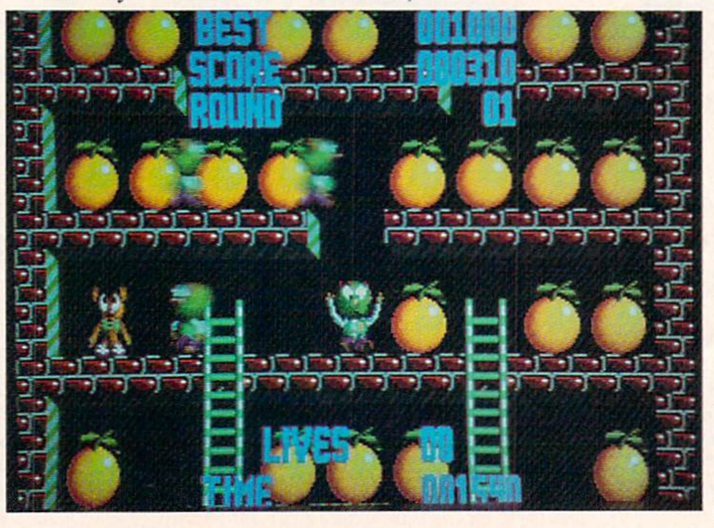
but its staccato drum beat score is oddly compelling. It adds a needed note of urgency and balances the cartoonlike art style.

Some computer games offer utterly new experience or blaze fresh technical trails. Others do nothing more grandiose than give the player a good time. *Robbeary* fits the latter category, and it does the job well enough to make it worth adding to anyone's collection.

Anco, P.O. Box 292, Burgettstown, PA 15021 (phone: 412-947-3922).

—Arnie Katz & Joyce Worley

Circle #207 on Reader Service Card



The larcenous Bertie Bear must run, jump, and climb around each of the 24 floors of the Store in **Robbeary**, *gathering the fruit shown in side perspective on the shelves.*

AMIGA VIDEO—HAVING FUN AT MAKING A CREATIVE LIVING

Forget the advertising hype—here's our report on real people using real products.

By Richard Herring

Does anyone really use the Amiga for desktop or commercial video production? Or is it just magazine writers extolling the virtues of the Amiga for producing videos, and magazine reviewers raving about the bells and whistles of the latest video or animation product—magazine writers and reviewers who make their living with words, not videos.

Perhaps we should assume that Amiga video is alive and well because so many computers are producing so many video-related products. Surely they would not go to market unless there were sales to be made. But sales do not equate to use in the business world. How many people do you know who use games to make a living? Yet games sell well.

We decided to track down the reality of Amiga video, to produce an "anthology" of real people using real products and making a real living. You shouldn't have to be limited to the hype of advertising, the biases of reviewers, or the summaries in new product announcements.

Instead, let's talk to artists, TV stations, and business people about how they use the Amiga, with all its video peripherals and software, to do their jobs and satisfy their clients every day. We will see that video production and animation is not about genlocks and 3-D packages. Rather, it is the filtering of artistry, drive, and imagination through those products to produce an image that is moving—both visually and emotionally.

The people we will talk with are experts—not because they can program Phong shading—but because, like you and me, they have learned one little trick at a time, overcome one obstacle after another. In the end, all those little victories, often seemingly unrelated, metamorphized into expertise. Today's experts have come to Amiga video and animation from startlingly different backgrounds. Whether they were dancers, managers, technicians, or comic book illustrators, they have turned their skills, and an Amiga, into great videos and animations. And made a living in the process.

The single thread that runs through all their stories is enthusiasm and exuberance.

KILLER DEMOS

So your Amiga has a mouse, but does your monitor have a cat? It does if you've got *El Gato.* While a flat rectangle revolves on the screen, a "real" cat runs in it—first to the left, then to the right—back and forth with feline grace.

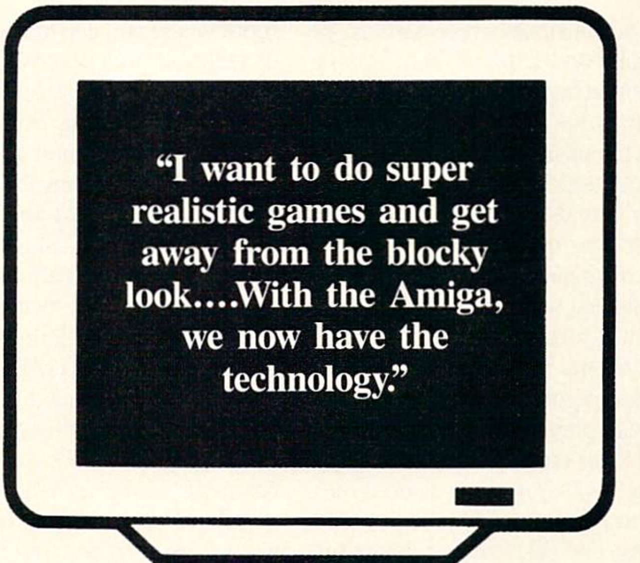
Although this "killer demo" is two years old, it is still one of my favorites. Even people who don't understand computers or appreciate the difficulty of hi-res animation are stunned by *El Gato.*

An early experiment with the ANIM format, *El Gato* was designed as an eye-catching promotional piece for Blair-Sullivan Computer Graphics and Animation in Menlo Park, on the peninsula of California near San Francisco. Their idea, once they saw the Amiga, was to do realistic animation, getting away from the blocky computer graphics that other machines force you to deal with. Kevin Sullivan told me about the company.

Sullivan does his animations using two Amiga 1000s. Only one has a hard disk (a SCSI drive from C Ltd.), but files can be moved either by swapping floppies or through a serial (null modem) cable. He uses a public domain program by Justin McCormick, of PIXmate fame, for file transfers. Both machines have expanded RAM. One has 6.5 megs, the other only 4.

"I'm always looking for more RAM," says Sullivan, who had ordered another RAM expander that he hoped to receive the next week.

For in-house work, Sullivan prefers SuperBeta. Commercial work may be delivered on ½ inch tape produced on the company's industrial JVC deck, which supports stop motion, or on ¾ inch tape produced by local shops that specialize in Amiga video.



On the software side, Sullivan has "just about everything there is." But he still relies on *DeluxePaint II.* Sullivan has stayed away from 3-D modeling programs for production. He doesn't like having to let a complex project "cook for a couple of days" while the Amiga performs millions of calculations.

The individual programs from Hash Enterprises appeal to Sullivan because of their modest approach. He likes *Animation: Flipper* and *Animation: Multiplane*, but considers *Animation: Apprentice* too complex, requiring too much time to master.

Sullivan also uses the Digi-View software a lot, and likes A-Squared's *LIVE!* digitizer with Elan Design's *INVISION* to produce quick rough drafts. As a result of all his work, Sullivan gets a lot of early releases to try out. He was recently impressed with Antic's *Zoetrope: The Animation System* for its fast output.

Blair-Sullivan doesn't just do artwork; they also represent different artists who can give a project a particular "look." Those other artists may work on Amigas, Macs, or even IBM-compatibles. Sullivan sees the business expanding into an ad agency for computer graphics.

The original *El Gato* was done with *DeluxePaint II* because it supported perspective. The animation has 96 frames, but Sullivan limited it to 8 colors to keep the file size reasonable. He has other versions with more colors that he never released, but the files get pretty big.

El Gato's cat, it turns out, wasn't a family pet, but was pulled off a video tape, with representative motions from different frames digitally "spliced" together into one continuous loop. In those "early" days of Amiga video, Sullivan worked directly with Aegis for assistance with the ANIM format.

Blair-Sullivan has done a little of everything with Amiga video. They have produced industrial videos for tomato packers and ball bearing manufacturers. They've built promos for trade shows, done cel animations for the opening and closing titles of commercial videos, and designed the graphics and animations for computer games.

"I want to do super realistic games and get away from the blocky look," says Sullivan. "With the Amiga, we now have the technology."

The Grateful Dead is a current project Sullivan is excited about. He is designing the titles for a cable TV series about the rock band.

"Cable TV represents a great opportunity," says Sullivan. With so many channels to fill, cable always needs material. Independent producers can be especially good to work with. The bulk of the work will be text and titling.

With all the current capabilities of the company, Sullivan still dreams of a 68030 Amiga (maybe the rumored Amiga 3000) with 8 bit planes and 2 megs of chip RAM. Dreams aside, he'd still like to get his hands on a Fatter Agnus.

Sullivan is pleased with Commodore's recent marketing efforts. When IBM came out with its VGA analog display, he feared the Amiga might lose its edge.

Animation capability was what first got Sullivan excited about the Amiga. "The individual can have this kind of power to create any reality he can imagine."

"I'm really looking forward to the things people will do with the Amiga in terms of personal expression. It's a wonderful machine for new art forms."

Whatever new art forms may evolve around the Amiga, we suspect that Sullivan will be right in the middle.

AMIGA VIDEO IS MUSIC

I reached Vincent John Vincent at his Vivid Effects office on a holiday.

"Hello."

"Uh, I'm trying to reach Vivid Effects."

"Oh, you have." (Laughter.)

Vincent quickly explained that the laugher wasn't about my call but about some "creative" cabling and an old monitor that were trying to take over the office where he and his coworkers were spending Veteran's Day.

I had heard that Vivid Effects uses an Amiga in live, onstage rock performances. I could not wait to hear how they married video with music. From the mile-a-minute descriptions Vincent had of one incredible example of live interactive video after another, I wasn't disappointed.

Vivid Effects—which is associated with Very Vivid, makers of *Mandala* software—is a Toronto service company. Music is just one of the novel uses they have found for Amiga video.

Competition with the high-end animation market can be tough. For Vivid Effects, lo-res, 32-color presentations are the norm. So they have to imagine more interesting applications.

Vincent is a dancer and performer. When he's not impressing corporate clients with business presentations, he climbs on stage with the rock band Daze of You. His instrument is an Amiga 1000 and a big screen. Using a camera, he drops himself (or at least his image) into an Amiga-created environment and takes his audience on a video journey.

[The *Mandala* software, created by Vincent and Frank MacDougall, allows the user's image to touch still or moving graphics (brushes) and trigger an associated function. A sound, changing graphic, or musical theme may result.]

During his performance, Vincent will enter a forest where he can reach up and pull birds perched in trees so they'll squawk in tune to the band's music. Then he may approach a temple where the bricks can be played like a giant keyboard, or an altar where he can play music on the candles. To give the band a break, he can enter a cavern complete with a drum kit so he and the "real" drummer can do a solo.

Although the band plays mostly in the Quebec to New York circuit, Vincent recounted one performance before two live audiences in Toronto and Paris. Just one of the many incredible schemes that Vivid Effects actually pulls off, Vincent used the video teleconferencing lines of the Paris phone system, U.S. Sprint, and Bell Canada to allow him to create his video environment in Paris while the band played in Toronto and both audiences sat back to enjoy the show.

When the boss isn't on stage, Vivid Effects manages to take the same musical creativity to its corporate clients. Vivid Effects created a musical environment for the employees of Labbatt's Beer. First an employee picked an onscreen instrument to play along with "Wipe Out" or "Black Magic Woman." Then the employee became the lead singer with a video band playing "Honky Tonk Woman," "Mony Mony," or "Born to Be Wild." An Amiga 1000 handled the chroma key in of the person with images from a videodisc. The employees, in addition to the thrill of live performances, received video tapes to immortalize their stardom.

Vivid Effects still uses Amiga 1000s, though with A-Squared's *LIVE!* digitizing board for the 2000 now out, they will be upgrading. They combine a SuperGen genlock, their own digitizer board (no you can't buy one, only ten exist), and Comspec RAM upgrades to 4 megabytes. Other than their own animation package (which can use any IFF files), the only software they favor is *Deluxe Paint II.*

Don't get the impression that Vivid Effects is just into music either. They also design advertisements, business presentations, art gallery and museum installations, video games, and educational video. Imagine a business executive walking "into" his big screen presentation, pointing to any month on a bar chart, and transforming it into a detailed graph for that month.

Imagine yourself standing before a video camera in a science museum, and seeing your image in a graphical room where you can turn on the lights, pull down the blinds, or make a statue come alive with a touch. Imagine a video game where your screen image must pour beers with one hand while juggling balls with the other. Imagine a child reaching out his hand so that his onscreen fingers touch the letter "A" and transform it into an apple or an alligator.

Vivid Effects didn't just imagine these phenomena, they've produced each one. In their 1½ years of actual production, they've worked to sell as many different kinds of clients as possible on this technology. And they are succeeding.

But competition with the high-end animation market can be tough. For Vivid Effects, lo-res, 32-color presentations are the norm. So they have to imagine more interesting applications. With a 16-color background, the other 16 colors are used to shadow the person into the onscreen environment. Using a digitizer rather than a genlock, 3-D is simulated by moving graphics behind the person's image as well as in front of it. For fuller backgrounds and more colors, the 1000 can drive a genlocked videodisc player.

RAM is important to Vivid Effects' work. Art installations can be completed with only 1.5 to 2 megs. But business installations run up to 4 megs. Once 2000s arrive at Vivid Effects, 8 megs may become commonplace.

Trainers appreciate a fully animated video world where employees at a sales motivation seminar can participate. Big businesses appreciate long-distance, interactive computer video using teleconferencing. And educators appreciate the reduction in choreography time when an actor (in the tradition of Bert, Ernie, or Big Bird) can move on stage and actually see himself interacting with an imaginary environment (rather than having to walk on an empty set and later have traditional animations built around his image).

The name Vivid Effects was designed to create a mindset, to give an impression of how the company's work would feel rather than portraying the technical nature of what they do. Vincent describes his work with the Amiga as the "most wild and interesting stuff of all." Who can disagree?

AN ANIMATION SHOP (MADE POSSIBLE BY THE AMIGA)

Drawing comic books was Nick Poliwko's first love. But

after studying animation in college and learning to enjoy the intricacies of computers, he realized drawing still pictures was not enough. He wanted motion. Working briefly at a couple of animation houses—Omnibus and Mobile Images—he gained a taste for the life that movement could supply to his images.

Three years ago Poliwko began trying to sell his video services to corporate clients. The only tools he had available were his Amiga 1000, *Deluxe Paint,* and *Deluxe Video.*

Trying to impress a potential industrial client, Poliwko produced a demo animation tape. It wasn't enough. But the client gave Poliwko a tape of animations purchased from a mainframe animation shop. Back at the office, Poliwko labored to reproduce most of those animations on the Amiga. He was so successful that his second appointment with the client resulted in a sale. And he's been selling ever since.

As the owner, president, and operator of Pixelight Animation, Poliwko has devoted his full time to producing corporate and industrial videos since those early days. Operating out of Toronto, he has worked with Gulf, Bell & Howell, and Atlantic Federal, as well as numerous regional businesses.

Poliwko sees the Amiga as the easiest way to accomplish what he does without going to full-blown, traditional animation techniques. And those take more time, involve film processing, and otherwise drive up costs.

Since the Amiga came out, Poliwko has piled up a mountainous stack of hardware and software at Pixelight Animation. Although he still uses *Deluxe Paint II,* over 40 other programs now support his animations. He quickly rattles off a list of popular programs when asked about his favorites. Aegis' *Videoscape 3D* and *Modeler 3D* top his list, although he does not compile his animations with *Videoscape.* Instead he uses *PageFlipper Plus F/X,* from Mindware International, for its ability to add timing controls to his animations. Of *PageFlipper,* Poliwko says "Nothing gives you the ability to move masses of pixels as quickly."

Other favorites at Pixelight include MicroIllusions' *Photon Paint,* EA's *Deluxe PhotoLab,* Eagle Tree's *Butcher,* and Software Visions' MicroFiche Filer. Filer is used to produce animation storyboards. Poliwko can move up to 12 *Deluxe Paint* images into *Filer* so his customer can scan through.

On the hardware side, Pixelight is firmly rooted in the realm of the Amiga. "It let me get in and make a go of this business," says Poliwko. In addition to 1000s and 2000s, Pixelight relies on Digital Creations' SuperGen genlocks, Anakin's *EASYL* graphics tablets, NewTek's *Digi-View* digitizers, Comspec hard drives, and lots of RAM. Poliwko likes to work with at least 4.5 megs and says "Three is a necessity."

"Without the hard disk, RAM, and a genlock, you're stuck—limited to Mickey Mouse animations."

[Before genlocks arrived at Pixelight, videos were recorded directly from the 1000's composite (NTSC) output. "All 1000s were not created equal. I know some people who had problems with this. But ours worked okay." The SuperGen has not only provided genlocking capability, but, Poliwko feels, also produces a cleaner signal.]

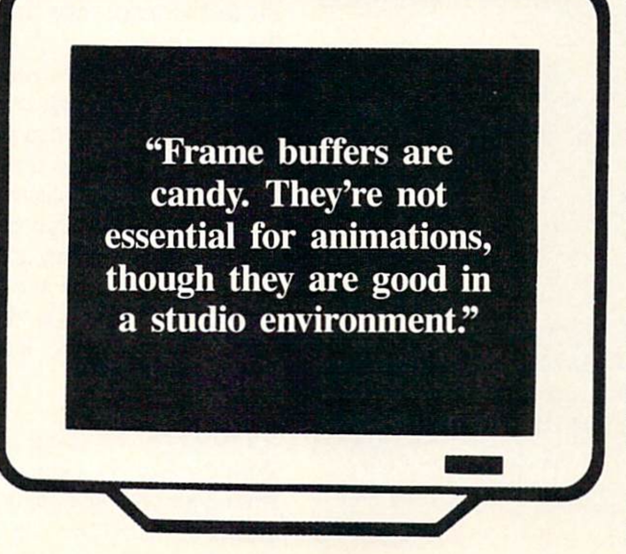
The producers he works with usually define the tape format Poliwko must use. He maintains a full ¾ inch editing suite for compatibility with the inhouse operations of industrial clients. But lots of new production is in the Betacam format.

For someone starting out today, Poliwko would recommend something a little different from what he has. Although he likes the dynamics of the 1000, he sees the 2000 (maybe with a 68020) as the place to be. Rather than relying solely on a hard disk, Poliwko would add a Bernoulli Box or other removable media (like Pioneer's 44 meg removable cartridge disk drive). Since his animation files are over a meg, a hard disk fills up quickly. With removable 20 to 30 meg cartridges, you could have unlimited storage for animations and for work in progress. A 20 meg hard disk would still be essential for storing programs.

For an animation shop, Poliwko doesn't recommend a frame buffer, or even the extra expense of a combination unit (like NewTek's *Video Toaster*) that contains a frame buffer. "Frame buffers are candy. They're not essential for animations, though they are good in a studio environment."

"You don't have to go to a single frame controller," says Poliwko, who likes being able to generate animations in real time.

Poliwko says it takes work, but competing with the big animation shops isn't too hard. Producers, who are the middlemen for his animations, are taken by the Amiga—especially for the money. Clients also like the savings. And repeat clients are always getting something better, as the Amiga's capability grows with new third-party hardware and software. Particularly with the new HAM animations, Pixelight's products are impressive.



Pixelight's clients constantly throw new challenges at Poliwko. They want effects that his software can't quite produce. That is when his creativity and drive allow him to mix and match the features and strengths of various Amiga programs to produce effects that lesser video animators would say can't be done.

I asked where the name Pixelight came from. Poliwko laughed and said it just seemed natural. "You draw with light on a computer. You draw in pixels."

Because I had talked with a number of Canadians who are into Amiga animation and

video, I asked Poliwko why Canada is so hot on the Amiga. He laughed again and told me the impression in Canada is that the Amiga has made more inroads in the US. He also said that the comparatively low cost is great, especially considering that the Amiga is the only microcomputer with such good video and animation capabilities.

Poliwko conducts video workshops where people from studios are always interested in the Amiga. He says that Commodore in Canada is pushing the Amiga for desktop publishing, not as a video machine. Given the Amiga's current capabilities compared to other micros, Poliwko thinks that's a mistake. (But he quickly adds that new products from Gold Disk will help to establish Amigas in the publishing world.)

"Anybody can learn this technology," Poliwko says of Amiga video animation. "They probably should have basic drawing skills, or they'll be stuck with the images that come with the software. And some animation background–or at least a well-developed sense of rhythm."

BROADCAST AMIGA VIDEO (X 2)

CABLE

The next time you do some wilderness float fishing or visit the Kootenai National Forest, and find yourself with an evening to kill in Eureka Montana, make sure to check into a motel that has cable TV. Turn to cable channel 3, the advertisement channel. What you'll see is an entire channel run solely off an Amiga 2000. Whether it's a local rummage sale, the opening announcement of a new store, or a regular monthly business promo, you'll see ads designed by Robert Little.

Little is the soft-spoken computer guru (and a whole lot more) with the cable company–Channel 4 TV. A year and a half ago, his brother showed him desktop video on an Amiga 1000. Little was sold. By last May he had put together the forerunner advertising channel in Montana. To this day, it has few rivals in the state.

Little's vision, which fell together quickly, was to create an advertising medium for his community without sinking the station's budget. Although the station had no micros at the time, he realized that the Amiga's power and price made it the ideal machine. He already knew what other micros could (and couldn't) do, so the Amiga was a fast sell.

Only a week after the station purchased its new Amiga system, Little was on the air. (Kids, don't try this at home–he had eight years of computer background and his Amiga-owning brother at his disposal.)

The hookup is simple. The 2000's RGB video signal is converted to composite output by a Creative Microsystems V-I 2000 interface. Then the composite signal is fed to a modulator and onto the cable. The ad channel runs real-time off the 2000.

Designing the ads is a bit trickier. Little uses TV*Text (from Brown-Wagh) to write up the ad on an Amiga 500. He also uses NewTek's *Digi-View* to create special backgrounds. Then he'll use PAR's *Express Paint* (also from Brown-Wagh), *Digi-Paint,* and Progressive's PIXmate to add special graphics and text to the digitized picture. Finally, all the pieces are transferred to the 2000's 65 megabyte hard disk and scripted into a final product with *TV*Show.*

After months of practice, Little can crank out a typical ad in anywhere from 15 minutes to 2 hours. For a simple ad, he may only design a single screen of text. For fancier jobs, he'll do multiple screens with 65 to 70 words and special effects.

So far, the system has been no problem although it's in near-constant use. Little complains a bit about the noisy hard drive, but the thing that holds him back the most is the lack of a one-meg graphics chip. While looping through his ads, especially as he adds more and more special effects, *TV*Show* sometimes runs out of memory.

The future of cable advertising in Eureka looks good. Channel 4 TV's Amiga system will grow with it. Animations and 3-D effects are just around the corner, as is live input from a video camera. And, of course, lots of RAM will be added to support it all.

So whether you stay at the Ksanka Motor Inn or the Willow Fire Ranch, tune into the Eureka's Amiga channel. Once you've seen all the ads, don't miss the Tobacco Valley Historical Village at the south end of main street.

LP TV

Low-power TV is one of today's fastest growing industries. With three or four hundred LP TV stations already in operation around the country, the FCC is making new station grants in incredible numbers–as high as 30 a month.

COMPANIES MENTIONED IN THIS ARTICLE

(For hardware and software, see next month's guide to Amiga video products.)

Blair-Sullivan Computer Graphics & Animation
356 Waverly
Menlo Park, CA 94025
Phone: 415-326-8238

Pixelight Animation
186 Albany Avenue
Toronto, Ontario
Canada M5R 3C6
Phone: 416-536-8928

Vivid Effects
302-1499 Queen Street West
Toronto, Ontario
Canada M6R 1A3
Phone: 416-738-6535

[If you haven't seen the *El Gato* animation mentioned in this article and it's not in your user group library, send me a disk and return postage and I'll make you a copy. Or send me $1.75 to cover the cost of a disk, mailer, and postage. Richard Herring, P.O. Box 1544, Tallahassee, FL 32302.]

We went to the number one LP TV station in the nation, with more viewers than any other, to see if Amigas have a role to play. And, of course, they do.

"We looked at Nickelodeon and wanted that kind of creativeness and inventiveness," says Rob Levine of W17AB in FSU's Seminole country, Tallahassee, Florida.

Levine describes W17AB both as a small station with the bare basics in terms of production facilities and as a full service independent that just happens to operate on low power.

> "The Amiga's so easy to use you don't have to have a degree in anything. If you can move the mouse, you can get the job done."

"We have the people, we just didn't have the machines. The Amiga opened that up."

A died-in-the-wool Apple user, Levine was having repairs done at ECE—a shop that also sells Amigas. There, he saw the Amiga's wonderful graphics and had a chance to experiment a bit. An Amiga user was born.

["Most of the places I've been traveling," recalls Levine, "dealers are enthusiastic about the machine." They are providing the same kind of support he has gotten from ECE when he needs to try out new software, track down a product, or get a quick fix.]

Today, Levine uses an Amiga 1000 in W17AB's production facilities and a 2000 for development work as well as for the business end of the station. W17AB viewers see the sophisticated transitions of ProVideo Plus (character generator software from PVS Publishing) every day. The station also has a Chyron II, an expensive hardware character generator common in TV stations. Even though the Chyron's resolution is better, Levine describes its layered features as a "command nightmare" compared to the Amiga and ProVideo.

Although the station's 1000 has an Insider RAM expander to take it to 1.5 megs, Levine's 2000 has the 3 megs he needs to generate 3-D and animations. For development work on the 2000, Levine uses Broderbund's *Fantavision* and Byte By Byte's *Sculpt 3-D* and *Animate 3-D*. He has also been pleased with EA's *Deluxe Productions* and how easy it is to use. With these and other packages, the staff at W17AB are able to superimpose graphics and text on commercials and promotional spots.

Levine predicts the Amiga's future in LP TV from the rapidly growing number of video products available for broadcast stations. "You just hope that Commodore keeps up with it all. Apple is just sitting back waiting."

"Thank God for the third-party people," says Levine.

The lack of a broadcast-quality genlock was Levine's number one frustration. He couldn't do animations because it wasn't worth the investment in time to get the signal processed. After waiting and waiting for a backordered SuperGen, the station finally bought a Gen/One, from Comcommunications Specialties, and solved that frustration.

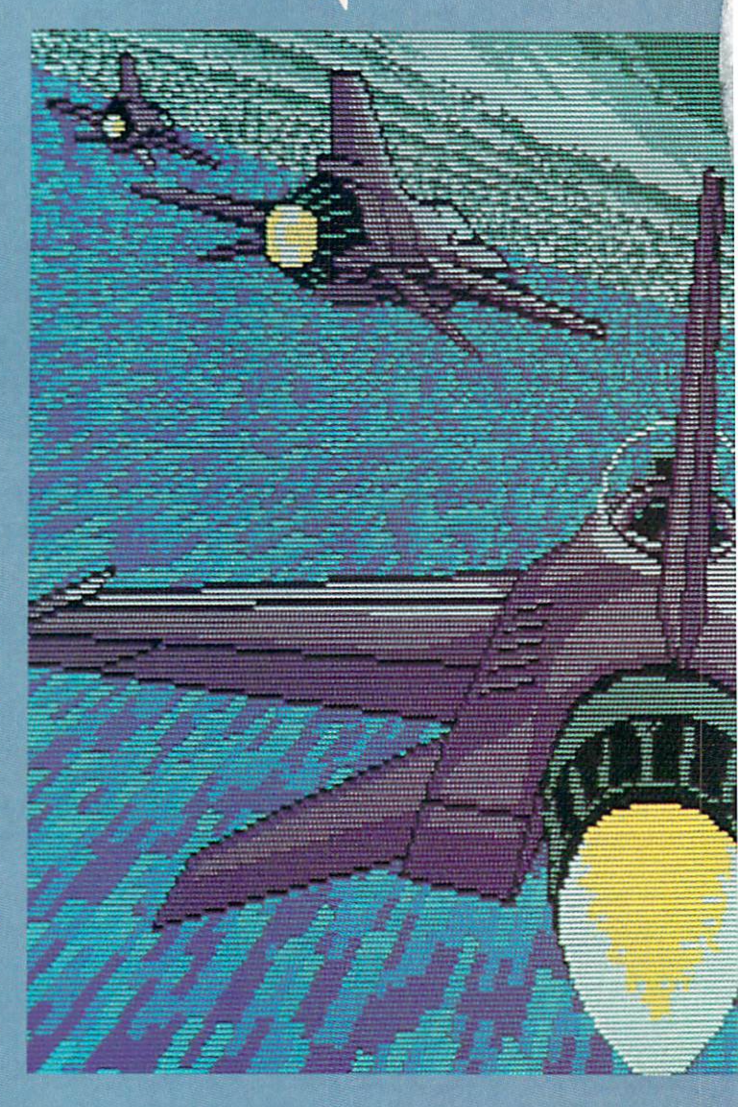
His genlock problem beautifully resolved, Levine's next frustration is computerizing the business end of the station. He thinks developers are paying far too little attention to the problems of scheduling, maintaining a tape library, and other station management. Levine longs for an integrated business management package that he can run on the 2000. He hopes that ACS's Station Manager series *(Time & Scheduling, Tape Library Management,* and others) will solve some of his problems, but as of late 1988 several of those packages had not been released. Levine has tried high-end database programs, but gets tired of having to convert everything to TV terminology.

Levine sees a "phenomenal market" for the Amiga from stations that don't have $50-$60,000 to invest in digital effects units that only do one thing. A $7000 Amiga system can change roles when the station demands flexibility.

"Larger stations and network affiliates are also looking at the Amiga," says Levine. "But most of us would like to see the resolution a little better."

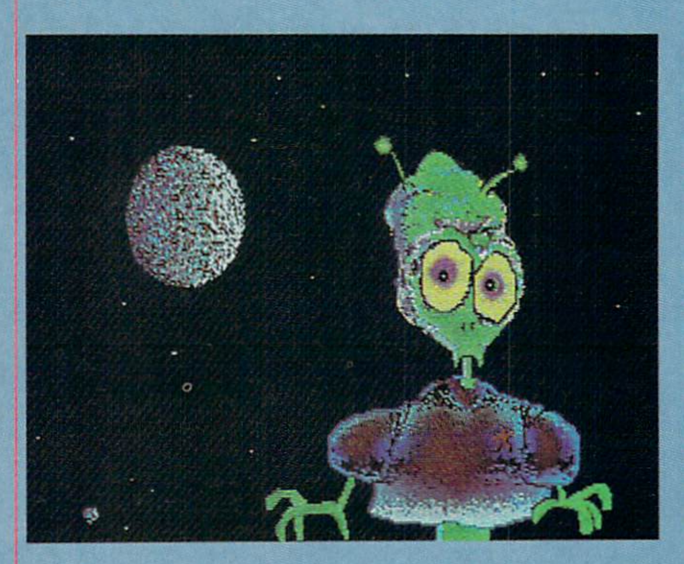
"At W17AB, we try to be innovative. And the Amiga's so easy to use you don't have to have a degree in anything. If you can move the mouse, you can get the job done. ☐

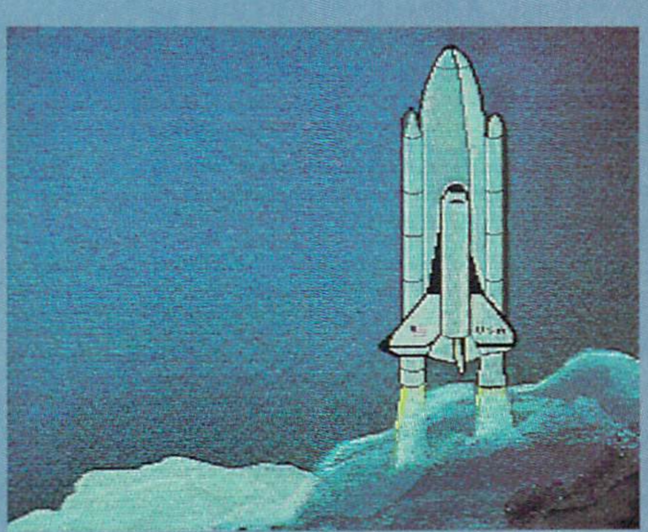




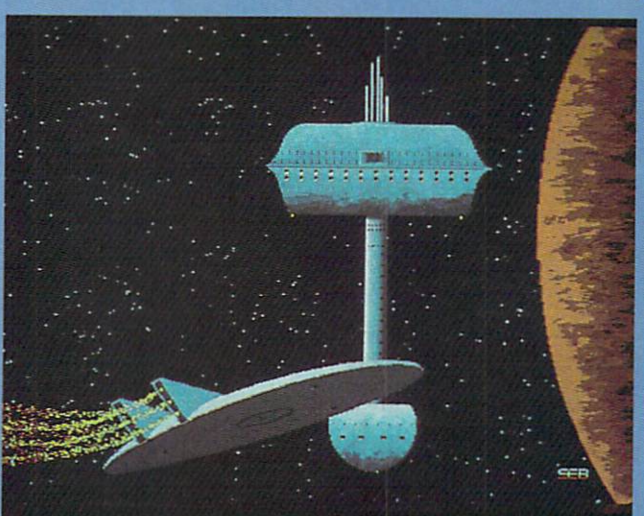
The *Art Gallery* offers the opportunity for fame and fortune to aspiring Commodore artists. Send your work on disk to *Art Gallery,* Ion International Inc., 45 West 34th Street–Suite 500, New York, NY 10001. Label each disk with the date of your submission, your name and address, the number of images on the disk, and the graphics or paint program used. Graphics produced on the Amiga are eligible for inclusion in *AmigaUser;* C-64, C-128, and Plus/4 images are eligible for inclusion in *Ahoy!* If your image is published, you will receive a free one-year subscription. Current subscribers will have their subscription extended by one year.

Note that the *Art Gallery* is not a contest. Published pictures are selected in an arbitrary and capricious fashion by the Art Director, based solely on their artistic merit.





You're used to the *Art Gallery* occupying space—but this month, space occupies the *Art Gallery.* At far left: *Mr. Martian* by Greg Wilcox (Minneapolis, MN) has only his antennae in common with Ray Walston's TV alien. At immediate left: hail *Columbia* by Robert M. Ellis (Ville LaSalle, QUE). Above: not quite in outer space, but more than high enough to give you a nosebleed, is *Falcons* by Jonathan Joshi (Jamaica, NY). Top right: the green cheese looks yellow reflected in *Moon Visor* by Vincent F. Morano, Jr. (Bloomington, NY). Middle right: attending the *Galactic Cathedral* by Glenn B. Stevens (Melbourne, FL) will bring you closer to God—and parking should be a breeze. Bottom right: *Space Station* by Steven Beckwith (Orlando, FL), drawn using overscan with interlace.



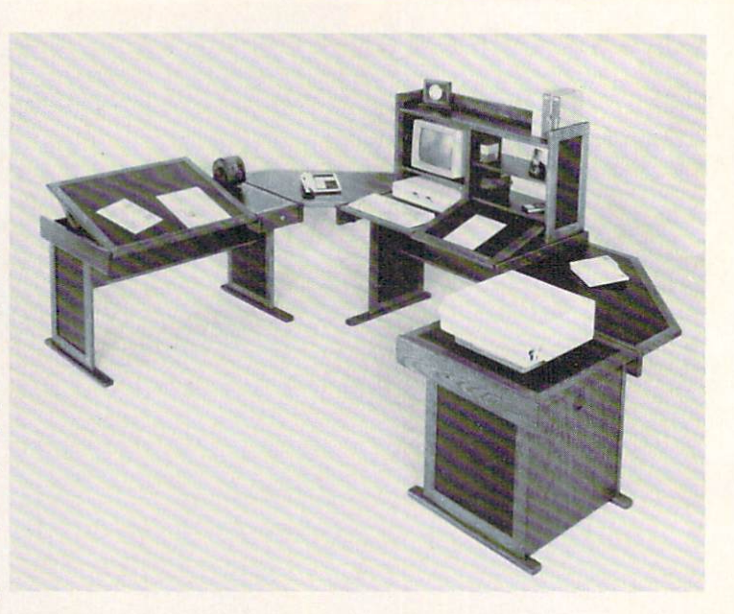
SCUTTLEBUTT

Continued from page 14

must pilot the Thunder Cloud II (too fast and accurate to be handled by a human) to head off the attack. Your weapons are capable of light speed and immediate cornering, and are equipped with ultra-sensor shields with negative ionization. For help in fighting the enemy, you can liberate some of the galaxy's 416 planets. At any time during the game you can join a training mission to improve your skills.

Titus, 818-709-3693 (see address list, page 14).

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Designed to accommodate a desktop publishing operation, the Executive Department includes layout table, computer desk, and printer stand, in solid oak or walnut.

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The Executive Department is a new oak or walnut work station designed for desktop publishing. Consisting of a computer desk with hutch, two corner connectors, layout table, and printer stand, the setup allows you to keep materials and hardware within easy reach. The desk's split work surface provides space for hardware on one side and an adjustable layout table or digitizer area on the other that tilts to two positions or lies flat. The hutch contains three adjustable shelves and a fixed top shelf. The components can be purchased separately or together. A free catalog is available on request.

Foster Manufacturing Company, 800-523-4855 or 215-625-0500 (see address list, page 14).

Circle #253 on Reader Service Card



Making music with the Amiga, The Copyist, *and an HP Laserjet Series II printer.*

COPYIST

The Copyist ($275), a slightly scaled-down version of the *Copyist DTP* transcription and scoring program mentioned in December's *Scuttlebutt,* allows files to be transcribed from KCS format, standard MIDI files, or SMUS. Scores can also be entered and edited directly, using the mouse and a set of mnemonic keystrokes. A full complement of musical symbols is included, including treble, bass, alto, tenor, soprano, and percussion clefs, guitar chord grids, and 16 stave capability. All key and time signatures are supported, and notes, rests, text, etc. can be placed anywhere desired.

Dr. T's Music Software, 617-244-6954 (see address list, page 14).

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MIDI SAMPLER

MicroDeal's *Advanced MIDI Amiga Sampler* ($169.95) is a full-featured, 8-bit stereo audio digitizer with a full implementation MIDI interface, built into a wedge-shaped hardware unit designed to complement the Amiga (versions exist for the 1000 and 500/2000). The digitizer accepts mono or stereo input via its line input sockets, and has an extra microphone input socket for di-

Continued on page 65

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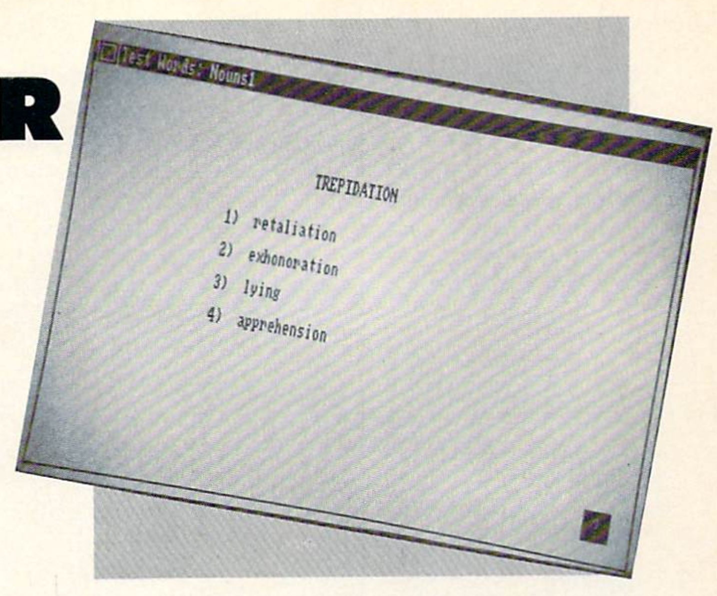
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WORD MASTER

By Bob Spirko

Eschew obfuscation! Let your Amiga help you improve your command of English.



Once every two years Don, a friend of mine, hauls out his inches-thick Webster's dictionary, turns to the first page, and begins an odyssey that will eventually encompass every word in the voluminous tome. If he's lucky, he'll complete the task in about eight months. Needless to say, Don's command of the English language is excellent. He has no trouble putting his ideas across clearly and forcefully, and he can follow most text effortlessly.

While we can respect Don's endeavors—and the results—most of us are loath to attempt such a long, monotonous task. On the other hand, we can't ignore the power of the word. By limiting our vocabulary we limit our ability to express ourselves effectively and understand the ideas of others.

Taking advantage of the power of the Amiga, I've written a program that will make learning words much more interesting. *Word Master* provides a way of learning new words by testing you with multiple choice and fill-in-the-blank quizzes. Thanks to Amiga BASIC, you'll find this mouse-driven program easy to use, and word memorization all the more effective through the use of speech synthesis. All you need to do is enter in the words, along with their definitions and their use in sentences; the program will arrange the tests.

When you run *Word Master* you'll find the screen empty except for the prompt: Ready for selection. This indicates that the menu bar is activated and you can make a selection. Press the right mouse button and the menu bar will display: Quit, Open, Lesson, Text, Speech, and Choice #. Each of these, in turn, will display an item list. Some of these will be inactive when you first run the program, but once you've created or loaded a lesson, all the menu items will be enabled.

To get started, you'll need to enter a lesson consisting of words, definitions, and sentences. Each lesson must contain like words. A single lesson may, for example, comprise nouns, but you should not mix nouns, verbs, and adjectives in one lesson. To enter a lesson, pull down the item menu under "Lesson" and select "Create." You'll first be asked to enter the number of words that will be in the lesson. Before you can begin to enter the lesson, though, you'll be asked to enter the number of words (between 10 and 24) in the lesson.

After this, you'll be prompted for the first word, which will be spoken after you enter it. Don't worry if the word is mispronounced, as you'll get a chance to correct it. Now type in the definition. The program, incidentally, will accept commas and semicolons. Now enter a sentence that will best illustrate the use of the word. When entering the sentence, don't enter the word itself, but rather just indicate its position in the sentence with an asterisk. Once the sentence is entered you'll be asked if you want to make any corrections or changes. If so, you'll be queried as to whether you want to change the word, pronunciation, definition, or sentence. To change the word, for instance, just press W (or w; the program recognizes both upper and lower cases) and enter the new word.

While Amiga BASIC will say most words correctly, you may encounter a few that are mispronounced. Press P while in the edit mode, and you'll be able to enter a new string. After entering it, you have a choice of hearing the word repeated, making another change, or exiting. Before you attempt to make changes in pronunciation, however, I recommend that you read appendix H in your Amiga BASIC manual.

Once all the words, definitions, and sentences are entered, you'll be prompted for a file name. The lesson will then be saved, and you'll find yourself back at the main menu. The program, incidentally, will automatically add the name of the lesson to a file called Class. This keeps a record of all the lessons that you enter. To see this, pull down the item list under "Open". You'll see the lesson that you just saved listed here. Now when you want to load the lesson, you can simply select it from the menu bar. A checkmark on the Open item menu indicates the current lesson in memory.

If after saving a lesson you find that you want to make changes or corrections, select Edit in the Lesson menu. This works like the editor in Create; just indicate the word that you wish to make changes to and you'll be able to alter the word, pronunciation, definition, or sentence.

Before you test yourself on the words, you may want to review them. Select Review in the Lesson menu, and use the mouse button to run through the words and their definitions and sentences. If you wish to abort part way through,

close the window as you normally would and you'll find yourself back at the main screen. The fourth menu heading is Test. There are three types of tests: words, definitions, and sentences. If you select Words, you will be given a word (which is spoken) and a list of four different definitions. Use the mouse to choose your answer. If it is correct, it will be highlighted and you'll move on to the next word. Should you get stuck, click your mouse over the question mark in the lower right corner and the answer will be revealed. After completing all the words, you'll be given your score and taken back to the main menu.

The Lesson item, Definitions, works much like Words. But instead of selecting a definition for a given word, you'll select a word for a given definition.

The most difficult test, however, is Sentence. Here you are given nothing more than a sentence with a blank space where the word should be. Not only do you have to recall the word from the recesses of your mind, but you'll have to spell it correctly. After selecting Sentence, you'll be asked if you want the first letter of the word displayed. If you're unfamiliar with the words, choose yes; otherwise, press N for no. During the test, if you can't guess the word, enter ? for the answer. You can abort the test with A. (Don't worry about learning all these commands—*Word Master* is well-prompted.)

The last two menu headings, Speech and Choice #, are easily explained. The Speech pulldown menu allows you to turn speech on or off for the testing and reviewing your lessons, whereas Choice # permits you to adjust the number of selections for word or sentence testing. For instance, given a word you can have the program display either four or five definitions to choose from.

The program includes two error traps. The first of these occurs at the start of the program when it creates the Open menu to list the names of the lessons. When you run the program, it will try to load the file called Class. If the file does not exist, it goes to a subroutine called ErrorClass. It then creates the file and returns to where it left off.

The second error trap watches for syntax errors when you're changing the phonetics of a word. It's easy to make this mistake here but the program, which would otherwise crash, simply prompts you to make a correction.

To get you started with *Word Master*, I've included a sample lesson, called Verbsl. The name, incidentally, is automatically written to the Class file by the ErrorClass subroutine. (If a menu heading is made without at least one item listed, the computer crashes when you try to list the items.) Verbsl, of course, consists of verbs. Two of the words, however, requires changes in pronunciation, which I've shown in brackets. After you've entered all the data, it will be saved automatically as "Verbsl".

The author welcomes any correspondence. Write to Bob Spirko, 129-330 Canterbury Dr. S.W., Calgary, Alberta T2W 1H5. □

SAMPLE LESSON: VERBS1

1. proscribe, to forbid
   The sect will * smoking and drinking.
2. reciprocate (riysih4prowkeyt), to return in kind
   She appreciated his gesture and intended to *.
3. stultify, to cause to appear stupid
   He will attempt to appear confident, but the bully will surely * him.
4. aggrieve, to injure unjustly
   The new taxes will * most families.
5. expiate (eh4kspiyey6t), to make amends
   The criminal must serve time to * his evil ways.
6. countervail, to act forcefully against
   As the enemy approaches we will attempt to * their assault.
7. confute, to prove to be wrong
   He believed that the theory was wrong and felt he could * it.
8. abjure, to renounce and forswear
   Galileo was forced to * his theory of earth's revolution.
9. malinger, to act sick to avoid work
   That clerk hates her job so she may often *.
10. importune, to urge with troublesome persistence
    He will * you until he gets his way.

Caution! Read your Amiga BASIC manual before attempting to enter *Word Master* (or any program printed in *AmigaUser)*.

Once you've done the required background work, we'll be happy to assist you with any problems. Call 212-239-6089 (if busy or no answer after three rings, 212-239-0855) between 8:30-4:30 EST.

```
' WORD MASTER

  RANDOMIZE TIMER:OPTION BASE 1
  DEFSTR a,d,L,p-s,w:DEFINT b,c,f-k,m,n,q,r,t
  DIM word(24),defn(24),sent(24),lesson(20),alist(24)
  DIM SHARED phon(24)
  clock=5:MenuDisabled=-1:nchoices=4:bottom=113
  sTry=TRANSLATE$("TRY AGAIN.")
  sThats=TRANSLATE$("THAT'S RIGHT!")
  SCREEN 1,640,200,2,2:WIDTH 78
  WINDOW 2,"WORD MASTER",,15,1
  PALETTE 0,.8,.8,.9:PALETTE 1,0,0,.5
```

```
  PALETTE 2,.95,.8,0:PALETTE 3,.9,0,0

MENU 1,0,1,"Quit"
  MENU 1,1,1,"Exit to BASIC
MENU 2,0,1,"Open
  ON ERROR GOTO ErrorClass
  MENU 2,1,1,"Verbs1
  OPEN"I",8,"Class
  WHILE NOT EOF(8):n=n+1:INPUT#8,lesson(n)
    MENU 2,n,1,SPACE$(2)+lesson(n):nlessons=n
  WEND:CLOSE 8:ON ERROR GOTO 0
MENU 3,0,1,"Lesson
  MENU 3,1,1,"Create
  MENU 3,2,0,"Edit
  MENU 3,3,0,"Review
MENU 4,0,0,"Test
  MENU 4,1,1,"Word
  MENU 4,2,1,"Definition
  MENU 4,3,1,"Sentence
MENU 5,0,1,"Speech
  MENU 5,1,2,"  On
  MENU 5,2,1,"  Off
MENU 6,0,1,"Choice #
  MENU 6,1,2,"    4
  MENU 6,2,1,"    5
FOR i=1 TO 8:READ how(i):NEXT
DATA 110,0,150,0,22200,64,0,0

Start:
  m0=MENU(0):LOCATE 3,3:PRINT"Ready for selection
  m0=0:WHILE m0=0:m0=MENU(0):WEND:CLS
  ON m0 GOSUB Quit,Opener,Lesson0,Test,Speech,ChoiceNo
Quit:
  MENU RESET:SCREEN CLOSE 1:END
Lesson0:
  ON MENU(1) GOSUB Create,Editer,Review
Test:
  ON MENU(1) GOSUB word,Definition,Sentence
Speech:
  IF MENU(1)=1 THEN i=2:j=1:how(6)=64
  IF MENU(1)=2 THEN i=1:j=2:how(6)=0
  MENU 5,1,i:MENU 5,2,j:GOTO Start
ChoiceNo:
  IF MENU(1)=1 THEN i=2:j=1:nchoices=4:bottom=113
  IF MENU(1)=2 THEN i=1:j=2:nchoices=5:bottom=129
  MENU 6,1,i:MENU 6,2,j:GOTO Start

ChangeDefn:
  PRINT:PRINT" Definition: "defn(i)
  LINE INPUT" Change to:  ",defn(i):GOTO Correct

ChangePhon:
  ON ERROR GOTO ErrorSay:p=phon(i)
ChPhon1: PRINT:PRINT" Phonetics: "p
  COLOR 2,1:PRINT TAB(2)" S ";:COLOR 1,0:PRINT "ay
  COLOR 2,1:PRINT TAB(2)" C ";:COLOR 1,0:PRINT "hange
  COLOR 2,1:PRINT TAB(2)" E ";:COLOR 1,0:PRINT "verything OK":PRINT
```

```
ChPhon2:
  a="":WHILE a<>"S" AND a<>"C" AND a<>"E":a=UCASE$(INKEY$):WEND
  IF a="S" THEN SAY p:GOTO ChPhon2
  IF a="E" THEN phon(i)=p:ON ERROR GOTO 0:GOTO Correct
  IF a="C" THEN
    PRINT" Phonetics: "p:INPUT" Change to: ",p
    p=UCASE$(p):IF p=""THEN p=phon(i)
    SAY p:PRINT
  END IF:GOTO ChPhon2

ChangeSent:
  PRINT:PRINT" Sentence:"TAB(13)sent(i)
ChSent1:LINE INPUT" Change to: ",sent(i)
  IF LEN(sent(i))>100 THEN BEEP:PRINT " String too long.":GOTO ChSent1
  GOTO Correct

ChangeWord:
  PRINT:PRINT" Word:"TAB(13)word(i)
  INPUT" Change to: ",word(i)
  phon(i)=TRANSLATE$(word(i)):GOTO Correct
Correct:
  CLS:LOCATE 3:PRINT" Word #"STR$(i)TAB(14)word(i)
  PRINT " Definition: "defn(i):PRINT " Sentence:   "sent(i)
  PRINT :PRINT " Change:";
  COLOR 2,1:PRINT TAB(10)" W ";:COLOR 1,0:PRINT "ord
  COLOR 2,1:PRINT TAB(10)" P ";:COLOR 1,0:PRINT "honetics
  COLOR 2,1:PRINT TAB(10)" D ";:COLOR 1,0:PRINT "efinition
  COLOR 2,1:PRINT TAB(10)" S ";:COLOR 1,0:PRINT "entence
  COLOR 2,1:PRINT TAB(10)" E ";:COLOR 1,0:PRINT "verything OK
Cor1: a=UCASE$(INKEY$):IF a="W"THEN ChangeWord
  IF a="P" THEN ChangePhon
  IF a="D" THEN ChangeDefn
  IF a="S" THEN ChangeSent
  IF a="E" THEN RETURN ELSE Cor1

Create:
  WINDOW 3,"Create",,0,1:WindName="Create":LOCATE 3
Cre1:INPUT" Number of words: ",nwords
  IF nwords=0 THEN WINDOW CLOSE 3:GOTO Start
  IF nwords>24 THEN BEEP:PRINT " Must be less than 25":GOTO Cre1
  IF nwords<10 THEN BEEP:PRINT " Must be more than 9":GOTO Cre1
  FOR i=1 TO nwords
    CLS:LOCATE 3:PRINT USING " Word _###";i;
    PRINT TAB(10)":  ";:INPUT" ",word(i)
    phon(i)=TRANSLATE$(word(i)):SAY phon(i)
    LINE INPUT" Definition: ",defn(i)
Cre2:LINE INPUT" Sentence:   ",sent(i)
    IF LEN(sent(i))>100 THEN BEEP:PRINT " String too long.":GOTO Cre2
    PRINT:PRINT " Everything OK? (Y/N)?
    a="":WHILE a<>"Y" AND a<>"N":a=UCASE$(INKEY$):WEND
    IF a="N"THEN GOSUB Correct
  NEXT:MENU 2,current,1
  WINDOW 4,"Save Lesson",(170,80)-(470,110),,1
  IF current=0 THEN sfile="Verbs1":ELSE PRINT:INPUT " Filename: ",sfile
  OPEN"O",8,sfile:WRITE#8,nwords:FOR i=1 TO nwords
    WRITE#8,word(i),phon(i),defn(i),sent(i):NEXT:CLOSE
  IF current<>0 THEN
```

```
    nlessons=nlessons+1:current=nlessons:lesson(current)=sfile
    OPEN"A",8,"Class":WRITE#8,sfile:CLOSE 8
    MENU 2,current,2,SPACE$(2)+lesson(current)
  ELSE
    current=1::MENU 2,1,2
  END IF
Cre3:IF MenuDisabled THEN GOSUB EnableMenu
  WINDOW CLOSE 4:WINDOW CLOSE 3:GOTO Start

Definition:
  WINDOW 3,"Test Definitions: "+lesson(current),,8,1
  LOCATE 6,27:PRINT "Use Mouse to Select Word
  FOR i=1 TO 2700*clock:NEXT:mark=0:GOSUB Shuffle
  FOR i=1 TO nwords
    GOSUB MultiChoice:CLS
    Quizz defn(i),wordq(),30,269
    IF WINDOW(0)<>3 THEN WINDOW OUTPUT 2:GOTO Start
  NEXT i:Score:WINDOW CLOSE 3:GOTO Start

Editer:
  WindName=" Edit "+lesson(current):WINDOW 3,WindName,,0,1
Edt1:CLS:row=2:col=15
  FOR i=1 TO nwords:row=row+1:IF i=INT(nwords/2+1.5) THEN row=3:col=45
    LOCATE row,col:PRINT CHR$(96+i)")  "word(i):NEXT
  LOCATE row+5,15:PRINT "Enter letter of word to edit, or";
  COLOR 2,1:PRINT TAB(49)" Z ";:COLOR 1,0:PRINT " to Save
  COLOR 2,1:PRINT TAB(49)"DEL";:COLOR 1,0:PRINT " to Abort
Edt2:a=UCASE$(INKEY$)
  IF a=CHR$(127) THEN WINDOW CLOSE 3:GOTO Start
  IF a>="A" AND a<CHR$(65+nwords) THEN i=ASC(a)-64:GOSUB Correct:GOTO Edt1
  IF a="Z" THEN
    OPEN"O",8,lesson(current):WRITE#8,nwords:FOR i=1 TO nwords
    WRITE#8,word(i),phon(i),defn(i),sent(i):NEXT:CLOSE 8
    WINDOW CLOSE 3:MOUSE OFF:GOTO Start
  ELSE
    GOTO Edt2
  END IF

EnableMenu:
  MENU 3,2,1:MENU 3,3,1:MENU 4,0,1:MenuDisabled=1:RETURN

ErrorClass:
  CLOSE 8:OPEN"O",8,"Class"
  PRINT#8,"Verbs1":CLOSE 8:RESUME

ErrorSay:
  BEEP:WINDOW 3,WindName,,0,1:LOCATE 3
  PRINT" Incorrect format. Please re-enter."
  PRINT:PRINT " Original Phonetics: "phon(i):RESUME ChPhon1

MultiChoice:
  FOR j=1 TO nchoices-1
MultiCh:choice(j)=INT(RND*nwords+1):IF choice(j)=i THEN MultiCh
  FOR k=1 TO j-1:IF choice(j)=choice(k) THEN MultiCh
  NEXT:NEXT:choice(nchoices)=i:right=INT(RND*nchoices+1)
  SWAP choice(nchoices),choice(right)
  FOR j=1 TO nchoices:wordq(j)=word(choice(j))
```

```
  defnq(j)=defn(choice(j)):NEXT:RETURN

Opener:
  MENU 2,current,1:current=MENU(1)
OPEN"I",8,lesson(current):INPUT#8,nwords
  FOR i=1 TO nwords:INPUT#8,word(i),phon(i),defn(i),sent(i):NEXT
  MENU 2,current,2:IF MenuDisabled THEN GOSUB EnableMenu
  CLOSE #8:GOTO Start

Review:
  WINDOW 3,"Review "+lesson(current),,8,1
  LOCATE 6,22:PRINT "Click Mouse to Cycle Through Words
  FOR i=1 TO 2700*clock:NEXT
  FOR i=1 TO nwords:CLS
    tabset=(78-LEN(word(i)))\2+1:LOCATE 5,tabset
    PRINT UCASE$(word(i)):SAY phon(i),how
    tabset=(78-LEN(defn(i)))\2+1:LOCATE 10,tabset:PRINT defn(i)
    PrintSent sent(i),word(i),15
    WHILE MOUSE(0)<>1 AND WINDOW(0)=3:WEND
    IF WINDOW(0)<>3 THEN WINDOW OUTPUT 2:GOTO Start
  NEXT i:WINDOW CLOSE 3:GOTO Start

Sentence:
  WINDOW 3,"Test Sentences: "+lesson(current),,0,1
  LOCATE 7,18:PRINT "Do you want the first letter of the word? (Y/N)
  a="":WHILE a<>"Y" AND a<>"N":a=UCASE$(INKEY$):WEND
  LOCATE 12,27:PRINT "Enter word or  ";
  COLOR 2,1:PRINT " ? ";:COLOR 1,0:PRINT " for Help
  COLOR 2,1:PRINT TAB(42)"DEL";:COLOR 1,0:PRINT " to Abort
  FOR i=1 TO 2700*clock:NEXT:mark=0:GOSUB Shuffle
  FOR i=1 TO nwords:query=1:CLS
    IF a="Y" THEN w=LEFT$(word(i),1)+STRING$(5,95) ELSE w=STRING$(6,95)
    PrintSent sent(i),w,10
    LOCATE 15,25:PRINT "Enter word, ?, or A:
Sent1:LOCATE 15,46:INPUT" ",w:w=UCASE$(w)
    IF w="?" OR w="/" OR w=UCASE$(word(i)) THEN
      COLOR 3,0:LOCATE 15,47:PRINT word(i):COLOR 1,0
      IF w=UCASE$(word(i)) THEN
        SAY sThats,how:mark=mark+query:GOTO Sent2
      ELSE
        SAY phon(i),how:query=0:GOTO Sent2
      END IF
    ELSEIF w="A" THEN
      WINDOW CLOSE 3:GOTO Start
    ELSE
      SAY sTry,how:LOCATE 15,47:PRINT SPACE$(15):GOTO Sent1
    END IF
Sent2:NEXT:Score:WINDOW CLOSE 3:GOTO Start

Shuffle:
  FOR i=1 TO nwords:j=INT(RND*nwords+1)
    SWAP word(i),word(j):SWAP phon(i), phon(j)
    SWAP defn(i),defn(j):SWAP sent(i),sent(j)
  NEXT:RETURN

word:
  WINDOW 3,"Test Words: "+lesson(current),,8,1
```

```
  LOCATE 6,24:PRINT "Use Mouse to Select Definition
  FOR i=1 TO 2700*clock:NEXT:mark=0:GOSUB Shuffle
  FOR i=1 TO nwords
    GOSUB MultiChoice:CLS:Quizz word(i),defnq(),20,189
    IF WINDOW(0)<>3 THEN WINDOW OUTPUT 2:GOTO Start
  NEXT i:Score:WINDOW CLOSE 3:GOTO Start

SUB BoxAnswer(colr,tab3,answer,ch16) STATIC
  LINE(tab3,38+ch16)-(tab3+5+LEN(answer)*8,48+ch16),colr,b
  END SUB

SUB PrintSent(s,w,r) STATIC
  f=INSTR(s,"*"):1a=LEFT$(s,f-1)+w+RIGHT$(s,LEN(s)-f)
  IF LEN(1a)<61 THEN
    tabset=(78-LEN(1a))\2+1:LOCATE r,tabset:PRINT 1a:EXIT SUB
  END IF
  h=60:WHILE MID$(1a,h,1)<>" ":h=h-1:WEND
  LOCATE r,10:PRINT LEFT$(1a,h):PRINT TAB(10)RIGHT$(1a,LEN(1a)-h)
  END SUB

SUB Quizz(phrase,alist(1),tab2,tab3) STATIC
  SHARED i,how(),right,clock,mark,choice(),sTry,sThats,bottom,nchoices
  query=1:tabset=(74-LEN(phrase))\2+1:LOCATE 5,tabset
  PRINT UCASE$(phrase):IF tab2=20 THEN SAY phon(i),how
  FOR j=1 TO nchoices:LOCATE 6+2*j,tab2:PRINT STR$(j)")  "alist(j):NEXT
  LINE (582,165)-(610,178),1,bf:COLOR 2,1
  LOCATE 22,75:PRINT "?":COLOR 1,0
Qzz:WHILE MOUSE(0)<>1 AND WINDOW(0)=3:WEND
  IF WINDOW(0)<>3 THEN EXIT SUB
  IF MOUSE(1)>580 AND MOUSE(2)>165 THEN
    answer=alist(right):ch16=right*16
    BoxAnswer 3,tab3,answer,ch16:query=1
    IF tab2=30 THEN SAY phon(i),how ELSE FOR k=1 TO 2700*clock:NEXT
    EXIT SUB
  END IF
  IF MOUSE(2)>54 AND MOUSE(2)<bottom THEN
    IF MOUSE(1)>100 AND MOUSE(1)<550 THEN
      chose=(MOUSE(2)-45)/16:answer=alist(chose)
      IF chose=right THEN
        BoxAnswer 3,tab3,answer,chose*16:SAY sThats,how
        mark=mark+query:EXIT SUB
      ELSE
        BoxAnswer 1,tab3,answer,chose*16:SAY sTry,how
        BoxAnswer 0,tab3,answer,chose*16:query=0:GOTO Qzz
      END IF
    END IF
  END IF
  GOTO Qzz
  END SUB

SUB Score STATIC
SHARED clock,mark,nwords
m=CINT(mark/nwords*100)
WINDOW 4," SCORE ",(208,82)-(350,112),,1
COLOR 3,0:LOCATE 2,9:PRINT m
FOR i=1 TO 2700*clock:NEXT:WINDOW CLOSE 4
END SUB
```



Understanding and Using the Command Line Interface

NAVIGATING YOUR DISK

Part I





By Richard Herring

Take a blank disk. Format it. Now copy any programs you use a lot onto it. Include any data files you've created. Forget directories. Ignore organization. This is easy. Make sure to fill the disk to the brim—0 blocks free. As you think of other files you'd rather have, delete enough of the originals to make space and add the new ones.

As you become a more sophisticated user, make a library of these disks. A directory listing should scroll for at least 2 minutes.

Now, try to find a file—any file—that you haven't used for a month or more...I'll wait...

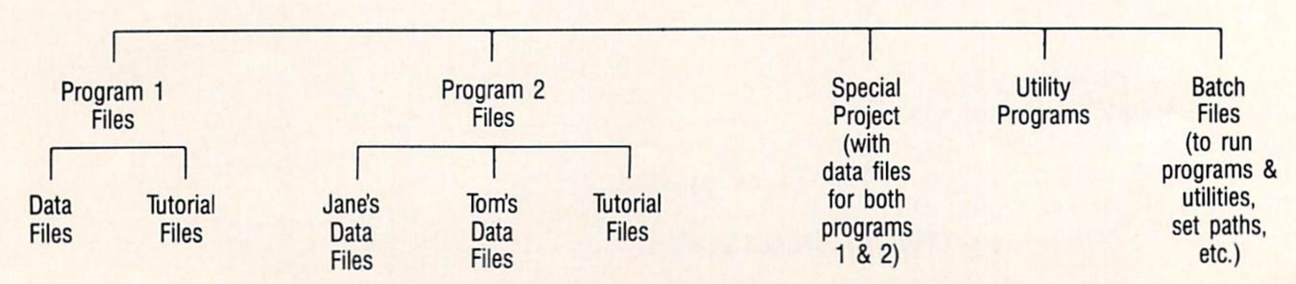
Our disks are like our garages. They seem to be good places to store things. But our treasured possessions are only safe if they can later be unearthed. And the files on most people's disks are just as disarrayed as the junk in their garages.

In a garage, the snowblower may be buried in a pile behind several bicycles, but once you dig it out, it's obviously a snowblower. Files are worse. Their names do not make their contents obvious. We all tend to throw public domain games and utilities into one big pile (or directory) with text, database, and batch files.

While this malady most affects hard disk users, who are becoming more common as hardware prices drop and AmigaDOS adds support, floppy-only owners are not immune. In fact, the less online disk storage you have, the more you may try to jam bunches of programs and data onto one disk. Organize it all on separate disks and you're liable to get the computer version of tennis elbow from disk swapping. I remember in the not so distant past, 1981 to be exact, upgrading from cassette tape and buying my very first disk drive. Each disk held a whopping 88K of data. After I loaded all my cassette programs onto one floppy, I wondered what I would possibly do with the other nine and whether I had wasted $40 by buying a whole box.

With today's 800K floppies, you can store enough different files on a disk to wreak havoc with your sanity when you try to find any particular one. Lucky for us, AmigaDOS is designed to cure these woes. It comes complete with an organizational scheme for storing and finding files.

Explore the Workbench disk that came with your Amiga and you'll find an example of this organization scheme—called directories. Directories provide us with a way to



group logically-related files together. Said another way, directories let us exclude all the files on a disk that are not logically-related to the task at hand.

Each directory may contain files or other directories. Placing directories within directories within directories is commonly known as "nesting." Nesting lets us subcategorize our files for even more efficiency.

This hierarchical structure is usually called a tree-structured directory. It is an efficient solution to the problems created by disks that can hold hundreds of files. But it places a responsibility on the user to subdivide the disk's storage space in reasonable units. If we do our job, while DOS does its, directory trees are not only efficient, but can even be elegant.

Many new users are confused by directory trees and simply dump all their files into the root, or main, directory of any disk they work with. They never have to worry about where a file is – it's always in the root. This is the same type of efficiency gained by keeping all your clothes, from sneakers to overcoats, in one huge pile so you'll always know right where they are.

Unfortunately, calling this structure a tree with the subdirectories as branches of the root, disturbs some users. Tree branches grow up. This looks more like roots.

To intelligently discuss all the commands associated with directories, we'll need a directory tree to work with. Refer to the hypothetical structure on page 46.

(Note: This directory structure is an example. For hard disk users, it's way too simple. For the majority of users, who operate with 1 or 2 floppies, it ignores the fact that many application programs fill a whole disk and require you to swap to a data disk. I'm not editorializing about the size of programs or about the values of hard disks. I'm just talking about logical directory structures and the associated commands.)

To build our example directory tree, we use the MAKEDIR command. (For consistency with MS-DOS computers, I've renamed MAKEDIR to MD in the :C directory of my RAM: disk.) MAKEDIR is a simple command because the only parameter it takes is the name of the directory you wish to create, including the path to that directory if it will not reside in the current directory.

We can make our job, and MAKEDIR's, easier by abbreviating the directory names. Our actual directory tree will look like the figure above.

Assume we're in the root directory (:) of a blank disk named "WorkDisk" and that AmigaDOS commands are available in the :C directory of a RAM: disk. To create the "Progl" subdirectory, just type "MAKEDIR Progl". MAKEDIR assumes that the subdirectory you want to create will be in the current directory unless you specify otherwise. Here, we're in the root directory, so "Progl" will be created as a subdirectory of the root.

To create the two subdirectories included in "Progl", type "MAKEDIR Progl/Data" and "MAKEDIR Progl/Tut". This time we included the path for these sub-subdirectories. Because we were still in the root, typing "MAKEDIR Data" would have created a "Data" subdirectory in the root, not in "Progl".

Working this way, we can continue and create the other four subdirectories in the root and the two subdirectories under "Prog2". Notice that AmigaDOS doesn't have any trouble with two subdirectories named "Tut". That's because DOS doesn't see them as the same. To DOS, one is "WorkDisk:Progl/Tut", the other is "WorkDisk:Prog2/Tut". AmigaDOS will prevent you from having two subdirectories with the same name only if they are in the same directory.

WorkDisk:

Prog1	Prog2	Proj	Util	S (or Batch)
Data, Tut	Jane, Tom, Tut			

It might look like you can trick DOS into making your job easy by creating two subdirectories at once. On our blank disk, why not just type "MAKEDIR Prog2/Jane" and create both "Prog2" and "Jane" in one fell swoop? Dream on. DOS assumes this is a mistake because it can't find "Prog2" on our blank disk and responds "Can't create directory Prog2/Jane". (The only shorthand way to create sub-subdirectories is using the AmigaDOS 1.3 SHELL with its "history" feature that lets you recall and edit previous commands. If you haven't invested in 1.3, don't overlook William Hawes's *ConMan,* a shareware program that's a must for all 1.2 users.)

MAKEDIR, as we saw, accepts paths. So we can be logged onto DF0: and create a subdirectory on DF1: with the command "MAKEDIR DF1:Prog2". Or, with a single drive, we could leave in the boot (Workbench) disk and type "MAKEDIR WorkDisk:Prog2". DOS would prompt us to switch disks before it creates "Prog2". If "Prog2" already exists, DOS will warn us of that fact and won't try to overwrite the existing directory.

Just like you and me, AmigaDOS can't be two places at once – though the ASSIGN and PATH commands soften this restriction and multitasking complicates it. DOS can be in only one directory of your disk at a time. To see where you are at any given moment, just type "CD" at the DOS prompt. (We'll assume that the AmigaDOS commands are available in the :C directory of a physical or RAM: disk.) CD, which is an abbreviation for Change Directory, will display the drive and directory that DOS currently "sees" as the default.

Let's see how we can use the CD command to navigate the directory tree on our example WorkDisk. Once you've booted up the computer, replace the Workbench disk with our WorkDisk. Type "DIR" and AmigaDOS demands that you replace the Workbench disk. This won't do.

Instead, after you insert the work disk, you can type "CD DF0:" or "CD WorkDisk:". CD lets DOS know that you've changed the default disk for that drive. Here, CD seems to be swapping disks, but it's really just doing its regular job of changing directories. It changes from the root directory of Workbench to the root directory of WorkDisk.

If you don't mind typing the disk name rather than a simple "DF0:", you can use CD before you swap disks. With the Workbench disk still in, type "CD WorkDisk:" to get to exactly the same place. DOS will then prompt you to swap disks. If you knew you wanted to go to the "Util" subdirectory you could even type "CD WorkDisk: Util".

Now let's move around. "CD Progl" will move us down one level in our directory tree. Typing "DIR" at this point will show two subdirectories—"Data" and "Tut"—as well as the program files for program 1. "CD /" will move us back to the root. But so will "CD :". Why would AmigaDOS give us two ways to do this? Really, they're not quite the same. "CD /" moves you up one level to the parent directory of the current subdirectory. "CD :" changes to the root directory.

From the root, type "CD Prog2/Jane". Now we're in the "Jane" subdirectory of the "Prog2" subdirectory of the root directory. "CD :" returns us all the way back to the root, while "CD /" only takes us back to "Prog2". In this case, where we are exactly two subdirectories deep, "CD //" is equivalent to "CD :". What if we type "CD ///" instead? How can DOS go up three levels when only two exist? It can't. DOS responds "Can't find ///" and leaves you in "Prog2/Jane".

From the "Prog2" subdirectory we can type "CD Jane" to move to the "Prog2/Jane" subdirectory. DOS knew we were at the "Prog2" level so we didn't have to include "Prog2" in our CD command.

Now if we want to go back up one level from "Prog2/Jane", just type "CD Prog2", right? WRONG. DOS will respond "Can't find Prog2". CD can only go to named directories that it can see in the current directory. AmigaDOS can't see directory names above, next to, or more than one level below the current directory unless you're quite specific. From "Jane", DOS can't handle "CD Prog2" (above) or "CD Tom" (next to). From the root, DOS can't handle "CD Jane" (more than one level below). If DOS could make such jumps, it would have to preclude us from having ANY two directories with the same name—and probably any file with the same name as any directory.

Instead, to move from "Jane" to "Prog2", you'd type "CD /". With a more complicated directory tree you might even type "CD :Prog2". That would force you all the way back to the root (:), then down one level to "Prog2".

To move from "Jane" to "Tom" you could type "CD /Tom". Move up one level (/ to Prog2) then down to "Tom". The longer path "CD :Prog2/Tom" would also work. "CD DF0: Prog2/Tom" is identical, but longer still.

Just like MAKEDIR, and other AmigaDOS commands, CD can't handle spaces in directory or file names unless you enclose them in quotes. But don't just enclose the offending directory name. If we set up our work disk with "Prog(space)2" as a directory name, and you wanted to move to the "Tut" subdirectory, you'd have to type:

```
CD "Prog(space)2/Tut"
```

enclosing the full path in quotes, not just the name of the directory that contains the space. (This is the only command in this column where you'd type the quotes. Everywhere else the quotes just identify the commands for you.)

CD lets us drop in for a visit to any subdirectory on any disk. DOS sees this subdirectory as the default. Commands like DIR, LIST, and TYPE will operate only on the files in this subdirectory, unless we use full path names to specify other directories or files, use the ASSIGN or PATH commands, or keep executable files in the :C directory. (We discussed ASSIGN at length in the August 1988 column.)

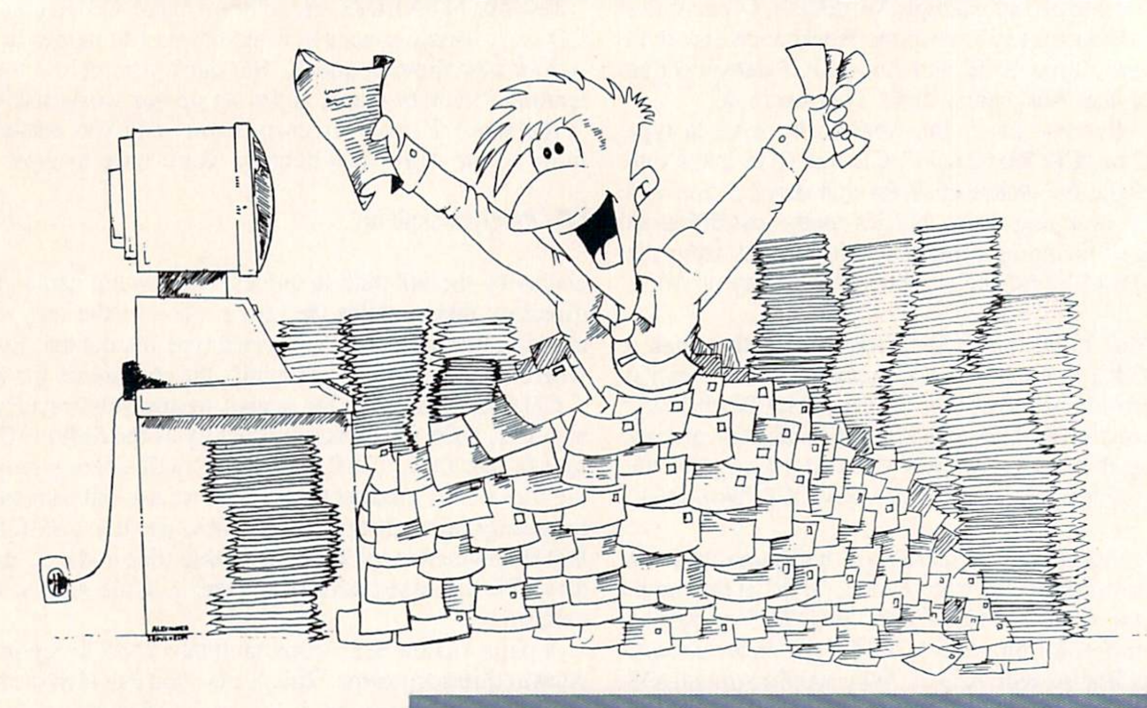
A plain vanilla "CD" command tells DOS to report the current directory name. This is how you can always check on exactly where you are in a complex directory tree. You probably won't use "CD" to check where you are under AmigaDOS 1.3 because of the new option to have PROMPT display the path to the current directory.

A CLI command line will accept over 200 characters. So it seems logical that using the command "CD A/B/C/D..." you could get to a subdirectory that is nested nearly 100 levels deep. You can even create such a monster with MAKEDIR, though why you'd want to I cannot imagine. However, you would run into other limitations of AmigaDOS. "DIR OPT A", for instance, will GURU when it hits the "J" subdirectory—the tenth subdirectory down. For AmigaDOS purposes, a ten level directory tree, counting the root, seems to be the limit. Even then, you'll want to impose a much lower limit.

(Let me interrupt one more time to discuss some verbiage—root, directory, subdirectory, parent, and child. The root is always the main directory of a disk. The parent directory is the directory in which the current directory shows up. So "Prog2" is the parent of "Tom". Likewise, "Tom" is the child of "Prog2", which is itself one of five children in our sample root directory. Unfortunately the terms directory, subdirectory, and sub-subdirectory are not defined this clearly. In common usage, any directory can be called a "directory" and any directory except the root can be called a "subdirectory." So you can be three layers down in a directory tree and talk about the directory you're in and the subdirectory, or directory, below it. The term "sub-subdirectory" is handy when talking about a specific example, but it, and its children, are too much of a mouthful to be used often.)

If you find that keeping track of your location in a directory tree is a pain and that typing long paths is even worse, we'll explore several handy solutions next month. In the meantime, here's a batch file that may be just the ticket. This batch file can go to any subdirectory in the

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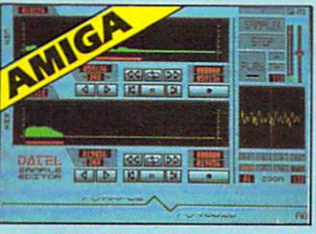
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current directory, in the current directory's parent, or in that directory's parent. On our example WorkDisk, it can navigate from "Prog2/Tom" to "Util" with the single command "EXECUTE OVER Util".

```
; Saved as OVER in the :S directory
.KEY subdir
FAILAT 30
IF "<subdir>" EQ ""
SKIP Oops
ENDIF
IF EXISTS <subdir>
CD <subdir>
SKIP Finish
ENDIF
CD /
IF ERROR
SKIP InTheRoot
ENDIF
IF EXISTS <subdir>
CD <subdir>
SKIP Finish
ENDIF
CD /
IF ERROR
SKIP InTheRoot
ENDIF
LAB InTheRoot
IF EXISTS <subdir>
CD <subdir>
SKIP Finish
ENDIF
ECHO "Can't find '<subdir>' in any parent of the current
  directory."
SKIP BigFinish
LAB Oops
ECHO "Please give me a directory name."
SKIP BigFinish
LAB Finish
ECHO "Now in '<subdir>'."
LAB BigFinish
```

OVER can't navigate from "Progl" to "Prog2/Tom" And whenever it can't find the subdirectory you specify, it leaves you in the root. But it will deal with full paths, like ":Prog2/Tut". I won't walk through this batch file line by line, but if you can't follow it drop me a line. I've expanded it from the version I actually use so it is as uncomplicated as possible. Still, it is a good example of moving around a directory tree.

Many other AmigaDOS commands operate on directories and make using directory trees simple and powerful. Next month, we'll look specifically at DELETE, DIR, LIST, PATH, PROMPT, PROTECT, and RENAME.

When designing or modifying a directory tree, a few guidelines will be helpful:

1) Start with a clean disk if possible. Create new directories and copy the files you want into them. This is often much easier than "cleaning up" an old disk that holds some of the files you want.

2) Use the root directory only to hold subdirectories, not files. This way, the root becomes a literal "table of contents" for the disk.

3) Limit your directory tree to the root and two levels of subdirectories. Otherwise you'll have to deal with ridiculously long path names that you'll never remember or type correctly. Obviously, this isn't a rule. Sometimes you'll only need one level of subdirectories, other times three or four may be most efficient. As a guide, though, keep directory trees wide and shallow.

4) Limit the number of files and subdirectories in any directory using the formula (# subdirectories) + 2*(# files) = 44. That could be two subdirectories and 40 files, or eight subdirectories and 28 files, or 20 subdirectories and four files. Then when you get a directory listing, it will fit on one full-size screen. The first entries won't scroll off the top and you won't have to pause the listing.

5) Keep subdirectory names short. This is the opposite of using long, descriptive file names. You will have fewer subdirectories than files and your subdirectories will be more important. So you'll be more likely to remember what's in a subdirectory even though the name is short. And short names will really help when you have to type the full path to a file that's nested several subdirectories deep. If short names worry you, use the FILENOTE command to attach descriptions that you can later see with the LIST command.

6) Although acronyms are a common way of abbreviating names, don't use them. While RTPECCH may seem like a wonderful mnemonic for "Research for Term Paper

on Eighteenth Century Coffee Houses," it's actually a string of gibberish you won't remember a month from now. A simple name like COFFEE would be much better (or TERM-PAP if you also keep the books for the local Coffee Boutique).

7) Keep your bath files in the :S directory where AmigaDOS will (by default) look for them. Some people prefer to keep batch files in the same subdirectory with the files they operate on, but that has two disadvantages. First, it can clog up those other directories with batch files that you're usually not interested in when you do a DIR. Second, it scatters your batch files all over. When you need a new batch file that's "just like" one you've done before, you will have to remember where the old one is and search it out.

8) Keep all the files for an application program together in one directory. If the program comes with example or tutorial files, store them in a separate directory. Then, if you ever upgrade to a later version of the main program, all its files will be in one place.

9) Usually, people keep word processor files, spreadsheet files, and database files in three separate subdirectories. That's often okay. But if you're working on a single project that requires using several different programs and their files, create a subdirectory for that project to contain all those different files. Because they are related in content, keep them together.

10) Avoid giving a subdirectory the same name as a file that will reside in the same parent directory. AmigaDOS does not like duplicate names in the same directory.

11) For hard disk users, add an extension to all logically related subdirectories. If every subdirectory that contains word processor data files ends with ".WP" you can type "DIR #?.WP OPT A" and see ALL the word processor documents on your disk.

Setting up and using directory trees is easy. It takes a little time on the front end, but the organization pays off when you're working under a deadline and HAVE to find a lost file.

How you set up the tree depends on your personal preferences. Benefiting from it requires just four steps:

A) Set up the directory tree.

B) Use it to store files.

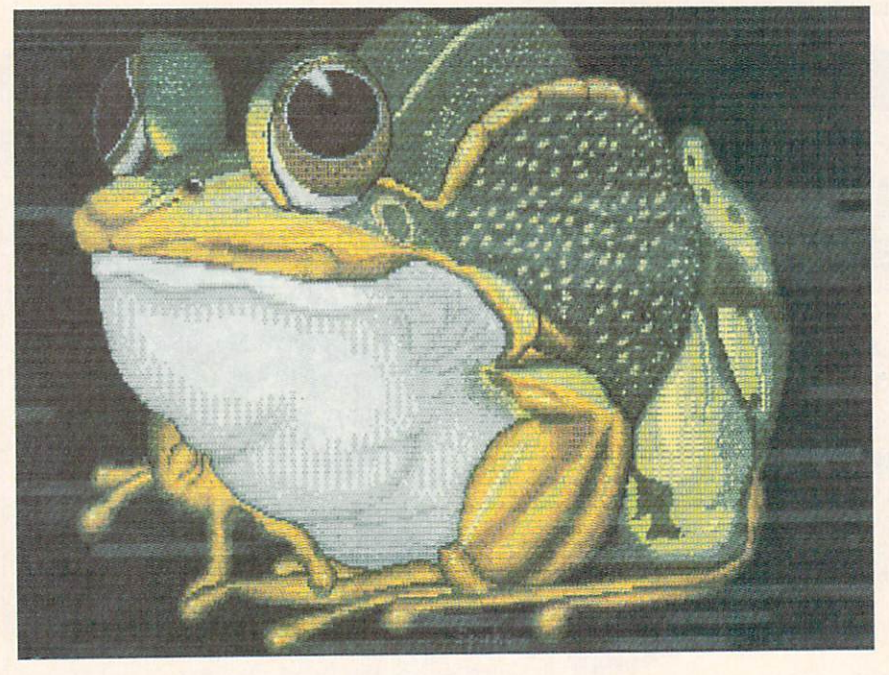
C) Clean it up periodically. Delete extraneous files or copy them to another disk.

D) Back up the disk. For a program disk, one backup after you set up the program is okay. For a disk with valuable data, back up whenever you have entered new data you are not willing to lose. Maintain this new backup AND one previous backup.

As soon as I find my leaf blower, carefully stored in the garage, I'll be anxious to see your creative solutions to the intricacies of AmigaDOS. Send them to P.O. Box 1544, Tallahasssee, FL 32302, and tell me what P.D. programs you'd like on the disk you'll receive if I use your solution in this column. □







```
 !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJK
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKL
"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLM
#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMN
$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNO
%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOP
&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQ
```

The NX-1000's cloth ribbon produces graphic dumps inferior to what is possible with more expensive methods, like inkjet printing. Lack of uniformity is the most serious problem. Also shown is type in seven colors including black.

NX-1000 RAINBOW
Star Micronics
Price: $379

We have been partial to Star Micronics printers ever since we obtained their Gemini 10X nearly five years ago. We were originally attracted to that model by its low cost, its many features, and its use of readily available, inexpensive Underwood spool ribbons. We have since concluded that the printer was very reliable as well, considering the massive amount of copy that has been churned out on that original Gemini 10X over the past five years. Since that time, Star Micronics has issued many new printers, such as the NX-1000 Rainbow which we examine here and which, true to its heritage, is low in cost and provides many features, such as three built-in near letter quality fonts and color graphics. On the other hand this printer no longer uses the Underwood spool ribbon, but a custom cartridge instead.

The NX-1000 Rainbow is a 9 wire, cloth ribbon dot matrix printer. It is rated at 144 characters per second in draft mode and 36 characters per second in NLQ mode. Draft quality text is printed bidirectionally, while NLQ text prints unidirectionally. NLQ text also requires two passes of the printhead per line, as the paper is advanced by a minute increment between each pass. The printer can be set to emulate either an Epson LX-800 or an IBM Proprinter II.

As Amiga users we chose the Epson emulation mode and used the EpsonX printer driver as provided with Workbench version 1.3. Under these operating conditions, we found that a color graphics dump of a lo-res (320 by 200 pixel) image, printed horizontally with screen proportions at a printer resolution of 120 dots per inch, took about 11 minutes to complete. A gray scale dump of the same image required only 2½ minutes. If you are using Workbench 1.2 you should use the Epson JX-80 printer driver, and you will find that color graphics dumps will take substantially longer than the above time.

The large difference in the printing

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!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcd
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcd
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcd
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`ABCD
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcd
```

NX-1000 fonts, top to bottom: draft, Courier, sanserif, Orator with small capitals, Orator with lower case.

time for the color graphic dump is accounted for by the mechanical configuration of the cloth printer ribbon. The color ribbon is packed as an endless loop in a plastic cartridge. The ¾" wide ribbon has bands of black, blue, red, and yellow ink. In its native mode, the NX-1000 Rainbow can print the above colors as well as violet, orange, and green. With the Amiga's printer driver, 4096 colors are generated by mixing the three basic colors and black in a four by four dot pattern. To build up a color image, the printhead makes up to four passes on a single line as it lays down dots for each ribbon color. Bit map graphics are printed unidirectionally with logic seeking. That is, the printer will skip that part of a line which does not require the ink of a specific color. It will also not shift to a color which is not required for a given line.

Graphically, the NX-1000 Rainbow supports horizontal resolutions of 60, 72, 80, 90, 120, and 240 dots per inch, of which the Amiga's printer driver supports the 120 and 240 dpi resolutions. The printer's vertical resolutions are 72 dpi or 216 dpi, or multiples of 1/72 and 1/216 inch.

The performance of the NX-1000 Rainbow was limited by the problems which are inherent in cloth ribbon dot matrix impact technology. The appearance and quality of the printout is largely determined by the condition of the cloth ribbon. Not unexpectedly, the printouts tend to fade as the ribbon is used up. It is also possible to get a shift in the color balance if one color is used more than another. The printer notes supplied with AmigaDOS 1.3 also caution that the ink colors may contaminate each other on the ribbon, especially at the higher printer resolution.

The big problem is the uniformity of the printout. The ribbon cartridge system folds the ribbon up inside a confined space. The parts of the ribbon where adjacent folds come into contact tend to build up ink concentrations, which produces a non-uniform printout. Even gravity comes into play, as the storage position of the ribbon can redistribute the ink across the width of the ribbon. These effects manifest themselves as non-uniform printouts with horizontal banding. These problems are common to all cloth ribbon impact printers, and they represent the tradeoff between this low cost technique versus the more expensive methods of laying down ink on paper, such as the inkjet.

With regard to text, the NX-1000 Rainbow provides three built-in NLQ fonts (six if you count italics as separate fonts). The available print pitches are 10 (pica), 12 (elite), 17 (condensed pica), and 20 (condensed elite) characters per inch, as well as proportional spacing of pica and elite. All fonts can be selected from the printer's control panel. Additional control panel operations include line feed, form feed, reverse micro feed, margin settings, and paper park. The last function lets you automatically back up pin feed paper to allow for the use of single sheets.

The accompanying manual does an excellent job of describing the printer operations with regard to both software and hardware. In addition to the usual printer commands, which require the use of escape codes and other nonprinting characters, the NX-1000 Rainbow also lets you embed specific printer codes within text using only printable characters. This is done by placing the codes inside double parentheses followed by a digit. For example, ((S))1 selects double width printing. Using this method you can select the font, size, and color of the text, and specify bold or italic.

Paper is fed through the NX-1000 Rainbow using either the built-in pusher type adjustable tractor or the built-in friction feed for single sheets. The supplied paper separator can be installed horizontally for tractor fed paper or vertically for use with single sheets. Individual sheets have to be manually loaded into the printer. The operation of the paper feed mechanism was precise and well-controlled.

Overall, the NX-1000 Rainbow is typical of the Star Micronics printers in that it provides a lot of features at a reasonable cost. You can buy this printer for well under $250, a price that is hard to beat for a 9 pin dot matrix printer with built-in multiple NLQ fonts and color graphics capability.

Star Micronics, Inc., 200 Park Avenue, Suite 3510, New York, NY 10166 (phone: 212-986-6770).

–Morton Kevelson

MICROFICHE FILER PLUS

Software Visions
Amiga with 512K, OS 1.2
Disk; $179.00

Microfiche Filer Plus is the bigger younger brother to the original "magnifying glass" microfiche metaphor database from Software Visions, *Microfiche Filer.* Both are in market simultaneously because they address different needs and provide different solutions. (The relationship between these two programs is very similar to that between Abacus' *DataRetrieve* and *Professional DataRetrieve*, reviewed below.)

MFF is a flat file graphic database with a unique means of cataloging, manipulating, and retrieving data—the storage and retrieval of data in pseudo-microfiche format. (Real microfiche

sees widespread use every day in libraries, law firms, institutions of higher learning, and many other places.)

In the non-computer version, data is cataloged, reduced, and transferred from originals to celluloid for convenient handling, storage, and speedy access. Special fiche machines enable users to scroll through "reels" or "slides" of data, enlarging the information in the process.

MFF or *MFF+*, both non-copy protected single disk applications, use this roving magnifying glass concept to expand portions of data for review, retrieval, and manipulation.

Microfiche Filer Plus *is a flat file database with a unique means of cataloging and manipulating data—storage and retrieval in pseudo microfiche format.*

MFF+ Insights

The manual, basically a souped-up version of *MFF's*, adds (or changes) about 15% of the content. An adequately illustrated, spiral bound affair, it does a nice job with installation instructions for a wide variety of hardware setups. The new documentation deals with features not in *MFF*, and *MFF+'s* tie to ARexx, the high-level programming language which creates macros for, and helps customize, *MFF+* databases. (See sidebar for specifics about *MFF+'s* additions, and this issue's *Exec File* for a thumbnail review of ARexx).

The manual also does an adequate job, via the Quick Tour chapter, of taking novices through the sample address book included with the application. Once through the tour you feel as if it's time to move on—only it's not.

In spite of numerous sample databases, a solid reference section, and decently comprehensive definitions, it is difficult to create a database of your own on the first attempt. The manual doesn't explain file and record setup in a coherent manner, nor does it clearly spell out report formatting procedures.

MFF+'s saving grace, which lowers the learning curve in spite of these omissions, is the application's intuitive nature and interface. It just feels right, from the magnifying glass to the pull-down menus. Furthermore, databases may be launched by double clicking on an icon, from a modified startup sequence, or via a macro written in the optional ARexx language.

Menu commands and editing functions have quite satisfactory keyboard equivalents. In the only reduction (or significant non-enhancement) of capabilities from its progenitor, *MFF+* no longer lets you copy records or entire databases by dragging the image until its border colors change. According to the ReadMe file, this method of duplication was too confusing for a majority of users. Now it is done in a more traditional way—by the Copy command in the Edit menu.

The Plus in *Microfiche Filer Plus*

1. First, a word on file format compatibility. *MFF+* will automatically read files created with any version of *MFF*. (The reverse is not true, however, and should not be expected due to the enhancements in *MFF+* over *MFF* version 1.02.)

2. *Plus* allows users the ability to create formulas which calculate and format numbers.

3. Then there's the ARexx interface, which makes custom macros and a high level programming language available to *MFF+* users.

4. Brushes, HAM mode, overscan, and automatic color mapping are now supported.

5. Greater hardcopy output capabilities are supported, in the range of 150 characters horizontal by 66 lines vertical.

6. *MFF+* is less cluttered and easier to use because, unlike *MFF*, it does not open onto the Workbench screen.

7. New editing features have been added (you're on your own here).

8. Screen refresh is up to 10 times faster with WB 1.2, and under 1.3's FastFonts utility, an additional 20% (maximum) speedup is possible.

MFF+, like *MFF*, suffers from frugality of selection (logical) operators. Yet, it is surprisingly robust and flexible. Equal to, greater than, less than, chaining, and character positional (first or last in a field) operators comprise the core, though there are a few others.

Still functioning like the original, *MFF+* limits you to individual field selections. However, multipass selects are capable of producing well-defined, discrete information and reports. For example, you could select firms with zip codes between 06600 and 07000, then filter that subset by selecting firms beginning with letters ranging from A to E. The next step might be to target distributors in a specific area code. That way you could tailor reports or direct marketing campaigns to hit all distributors on a designated part of the East Coast. Once that work is done, the next batch could be processed.

This multipass filtering process is not difficult, but it is a little more time-consuming than in programs which allow conditional combinations. By breaking the select (filtering) process into small, discrete steps, however, users maintain better control over the work being performed, and have less damage to reverse or recover from if a procedure is performed incorrectly.

MFF+ is a robust application which handles errors very well. It even sports emergency shutdown and reconstruction capabilities. Such attention to data integrity is just another example of the thoroughness behind the design and execution of *MFF+*.

Besides manipulation and storage of text-based information, *MFF+* handles graphics or picture-oriented databases. IFF graphics can be entered, edited, displayed, or printed. Limited to four colors at a time, *MFF+* nevertheless accepts pictures of up to 32 colors by "squeezing" or coding the 32 into 4. Via a color editor, users can designate the coding process, thereby maintaining a high degree of control over important visual data.

Graphics can be displayed in their original resolution and colors in a separate window for detail verification, or viewing pleasure. Multiple pictures can be displayed simultaneously.

Final Say

Based on a solid foundation, *Microfiche Filer Plus* strives for and reaches new heights. The new features are logical extensions for a product promoted as a "professional" heavyweight.

The only downside is the reliance on a separate program for programmability. While this may entice new users by keeping the initial purchase price down when compared to databases with integral programming languages, there is always the question of performance. After all, ARexx is an interpreted language, and it is not really built into *MFF+*.

Finally, *MFF+* is worth considering if the microfiche metaphor suits you; or you *might* be interested in adding programmability later (without initially having to pay for it anyway).

Software Visions, Inc., 26 Forest Road, Framingham, MA 01701 (phone: 800-527-7014; in MA 508-875-1238).

—Ted Salamone

Circle #213 on Reader Service Card

PROFESSIONAL DATARETRIEVE V. 1.03

Abacus Software
Amiga with 1 meg
Disk; $295.00

Do not, repeat, do not confuse *Professional DataRetrieve* with the original *DataRetrieve*. Data Becker, the German authors, did much more than give the original program a grander name after adding a few bells and whistles. Based on the same platform, these programs diverge so much that they target different users and can legitimately be considered different, though related, products.

Where *DR* is a flat file database, *PDR* is a full-fledged DBMS (Data Base Management System). What do full-fledged and DBMS stand mean or stand for? Try a whole new way of creating, manipulating, and reporting data.

More specifically, *PDR* builds on *DR's* mask-oriented entry, manipulation, and reporting structure, its comprehensive search, sort, and indexing capabilities, and its incredible graphic orientation. They both share a three-way interface: pull-down mouse menus, keyboard alternates, and use of the ESC key to call a command line. A two tier (operator and user) security system is also provided in both.

From there *PDR* adds relational data capability, a powerful, BASIClike application programming language, and an integral compiler. These three newcomers speak volumes when it comes to sheer power, flexibility, revenue opportunities, and (beneficial) increased database sophistication. (As an aside, both products will continue to be sold, as they address different markets and different needs.)

After a quick review of the features also found in *DR*, we'll progress to *PDR* specifics. As a flat file system, *DR* does not link or connect data automatically. If the same data is contained in more than one record, it must be manually updated wherever it occurs. Being mask-oriented means that you enter, alter, and manipulate data through "templates" that reveal designated parts of the data. All the data is there, but only certain fields can be accessed, according to the particular mask (template) being used. There are screen, output, and list masks.

The original *DataRetrieve's* search, sort, and indexing capabilities are powerful, flexible, and easy to use. Multiple wildcard capabilities, use of subrange for speedier access, and the ability to combine search criteria are representative examples. These and more are reproduced in *Professional DataRetrieve*. Even the graphic flourishes—design elements such as advanced font control and a toolbox with circles, rectangles, and rounded rectangles—are carried over from the original. So are the fill patterns and line width selection capabilities.

The *PDR* Difference

But *PDR* diverges at this point, its primary strength being the relational capabilities. Essentially, identical data in multiple records is automatically updated, just by changing it in one place. The program finds the other occurrences and makes the changes. Life is suddenly much simpler, especially when you're working with complex, large databases. (While this explanation is a simplification of the real relational situation, it conveys the meaning and rationale.)

Next in importance and power comes PROFIL, the BASIClike language used to develop custom applications. This feature alone makes the difference between *DR* and *PDR* as great as that between night and day. See the sidebars

PROFIL: THE LANGUAGE

PROFIL stands for PROFessional dataretrieve's Integrated Language, and it provides 116 commands and 97 functions. A detailed reference section discusses them all, including syntax, sample usage, and concise descriptions.

Variables range from numeric and numeric arrays to IFF, choice, and string. Mathematical operators start with the basic four, expanding to Modulo division, integer division, and exponentiation. And there are relational and logical operators (<, >, etc. and NOT, AND, etc. respectively).

The editor features a nice variety of edit functions, including, but not limited to, Block Copy, Block Cut, Insert Block, Search & Replace, Repeat Last Search, and Page Up/Down.

Function and shifted function keys can be used to activate strings or commands up to 99 characters in length. This macro recording capability makes repetitive tasks a snap, thereby decreasing the time (and cost) to build custom applications.

While the reference section provides an elementary understanding of PROFIL's basic structure, the sample programs provide a strong working knowledge of its uses and potential. Studying them is highly recommended.

MAKING MONEY WITH *PDR*

For consultants and small system houses, PROFIL stands for a healthier bottom line via creation of powerful custom applications–the kind customers pay good money for. Individuals can also benefit by applying the same features to their own solutions–without having to pay for consulting or externally produced custom applications.

The entire process goes something like this: you become knowledgeable about specific needs, write code to provide business solutions, and compile the source code for faster execution and security. Then you install it on your/your client's hardware and train users. (Somewhere in there you have to write end user documentation as well.) You also get to sell additional units of *PDR*, as there is no runtime engine for distribution with custom applications. (This can also be a negative, as it drives up the cost of a solution.)

Solutions can run from financial and distribution applications to manufacturing and service-oriented programs. The potential market is really only limited by the number of businesses and organizations who store, need, and use data about their customers, products, services, and members, etc. In actuality, the hard part isn't convassing for customers in need of solutions; the hard part is finding potential customers with, or willing to install, Amigas (instead of PCs or Macintoshes).

The solution to this conundrum is twofold. First, target the early Amiga adopters–audiovideo shops, design houses, etc. The second aspect requires salesmanship superb–demonstrating to and convincing possible clients that the Amiga, using your custom applications, will be capable, cost effective, and easy to use, and will provide a business growth path that does not lock them out of mainstream (read IBM) computing.

Advent of the Amiga 2000 with Bridgeboard option takes care of the potential IBM/MS-DOS bias. The A2500, with advanced 68020 chip, high processing speeds, and a bucketful of RAM, answers any performance questions (when compared to IBM Model 80s or Mac IIs). Both Amigas win the cost effectiveness category hands down when compared to IBM or Apple equipment. As important as this sales approach is in winning clients, it won't guarantee success–nothing will.

for details about PROFIL, and what it means for application developers.

Last but not least is the integral compiler. This little beauty turns source PROFIL code into fast, efficient, nonchangeable code that can be safely installed in a client's shop.

Besides compacting the code so it occupies less space, it also makes the (object) code unlistable. In other words, clients cannot view or edit the code. That's why it is safe to install at a client–and still keep the revenue stream from changes and updates.

Source PROFIL programs are written in standard ASCII format. This fact makes them available for editing in almost any word processor, in case the built-in PROFIL editor isn't sufficient for your needs.

Once compiled, the ASCII format is converted to pseudocode (p-code), an object form of code that prevents tampering or viewing. Besides faster execution (than source code), p-code occupies about half as much disk space.

Generally Speaking

PDR can open up to 8 files simultaneously, create a maximum file size of 2 billion characters and a maximum record size of 64,000 characters, and handle up to 2 billion records. The number of data fields is unlimited; up to 80 indexed fields per file are supported. The rest of the specifications read along similar scales, grand and eloquent.

The manual is well organized, complete with an index and appendices that cover error messages, a glossary of terms, search options, advanced tips, and keyboard commands. A separate quick reference card covers nearly every aspect of the PROFIL language. A few more screen illustrations would be nice, however.

Though *PDR* gets a healthy thumbs up for features, general use, and performance, there are a few areas that could stand improvement. It can only import ASCII and *Superbase Professional* files. Export is even more limited–ASCII (.ASC disk files). Also, lack of a run time version means that developers are going to have a tougher time making multiple system installs. Smaller companies or departments that are apt to use the Amiga don't always have the funds to pay for a complete *PDR* package for every user. Provision of a cheaper (or free) run time version would make life easier to developers, system integrators, *PDR* publishers and distributors, and end users.

Abacus Software, 5370 52nd Street S.E., Grand Rapids, MI 49508 (phone: 515-698-0330). *–Ted Salamone*

Circle #214 on Reader Service Card

MOVIESETTER

Gold Disk
Amiga with 512K
Disk; $99.95

The house lights dim; the audience settles back. Since the feature this evening is a terminal tear-jerker, the show ends with an especially good animated cartoon. Mine! –ZAP– Time jumps ahead... the Oscars. For best animation done by a previous unknown with zero drawing ability...please, hold your applause till after my acceptance speech.

First, the reason it's taken me so long to become an animator: I tried it once. How bitterly I remember that experience. For six laborious hours, a friend, Doug Smoak, and I single-framed his movie camera at a tabletop under 2,000-watt lights to convince blobs of clay to animate for a few precious seconds on screen. We planned the motions, accelerations, and collisions with tape measures and pocket calculators, all under the constant hazard of accidentally bumping something that would destroy the motion.

We couldn't wait for a lab, so we attempted to process the film by hand. The darkroom, however, was full of gremlins. Tanks leaked, critical temperatures slipped, and the film loader mechanism was an impossible Chinese puzzle that had to be operated in the dark. Having no film dryer, we stretched the precious strand its entire fifty-



clipper

OUR HOLIDAY SALES ARE SET!

The Clipper offers members of the *Ahoy!* Access Club discounts and other special deals on products and services advertised in *Ahoy!* and *Ahoy!'s AmigaUser*. Your membership is free for the duration of any subscription paid for prior to December 31, 1988.

Some of the offers are cross-referenced to ads in the December *Ahoy!* or *Ahoy!'s AmigaUser*. If you subscribe to only one of the two magazines and require information that appears in the other, contact the manufacturer directly.

To take advantage of any of this month's offers, follow the instructions on the front and back of the coupon. Fill in all necessary information. And use the original coupon only—facsimiles are not acceptable. For more information, call 212-239-6089 (if busy or no answer after three rings, call 212-239-0855).

Digitronics

Digitronics' ad on pa 57 of this month's *Ahoy!'s AmigaUs* offers the fully assembled and t d RC4 Ramcard for $225. The c con-figurable with ½ to 4 meg AM, and can be used with th a 2000 or with the 500 via Di adapter box. *Ahoy!* Acces members get to take **10% off** price, and pay only $202.5 must add $4.05 for shipping vi ground service; if you want you shipped some other way, call tronics at 215-459-4493. (Offer pires December 31.)

10% OFF

Pacific Peripherals

Pacific Peripherals' line of Amiga hardware (advertised on page 28 of this month's *Ahoy!'s AmigaUser*) includes the OverDrive hard disk controller for the 2000 (with or without hard disk drive) and the SubSystem expansion chassis for the 500. For *Ahoy!* Access Club members who order from them direct, Pacific will **waive the normal credit card surcharge**, and provide **free shipping**. (OverDrive and disk drives go by UPS 2nd Day Air; the SubSystem by UPS Ground.) (Offer expires December 31.)

NO SURCHARGE; FREE SHIPPING

SOFTWARE SUPPORT INTERNATIONAL

Even before its most recent update, the *Super Snapshot* utility cartridge had far too many features to list. Instead of trying to describe the new V4, we'll refer yoo to ... Support's ad on page 6 of this ... *Ahoy!* Also offered in that ad is ... *Super Snapshot Slideshow Creator*, which allows you to combine *Snapshoted* screens into presentations with professional video effects. *Slideshow* retails for $14.95; but when you buy *Snapshot V4* at the advertised price of $64.95 you can buy Slide- ... and ... ad on pag ... order by phone, ... ed in the ad and m ... saw this offer in the *Clipper* ... pires December 31.)

$5.00 OFF

DUNE SYSTEMS

Dune Systems' Chip Checker hardware for the C-64/128 or PC (see page 45 of this month's *Ahoy!*) can help you save on the cost of computer diagnosis and repair. And the *Ahoy!* Access Club can help you save on the cost of the Chip Checker! Dune Systems is offering our members **$10 off** the $159 price of the 64/128 version—you pay $149. For the ... regularly priced at $259, ... You must ... expire...

$10—$...

DISCOVERY

Like ... computer vi... sible to cure. B... them from infesting yo... Discovery Software's *Virus* ... *Protection (V.I.P.)* ... covery. Se... with the date of purc... dicated. In return, you'll receive a ... **copy of V.I.P.**—a $49.95 retail value! (Offer expires December 31.)

FREE V...

DigiTek Software

The fact that DigiTek markets so many programs for the Amiga and C-64 (see their ad on page 5 of this month's *Ahoy!'s AmigaUser*) makes their offer for *Ahoy!* Access Club members especially attractive. Buy any of DigiTek's programs directly from them for full price, and **take a second program for half price**; or, buy any two programs for full price and **take a third program free!** This offer is good on all DigiTek programs, including *Drum Studio, Skyblaster, Final Mission*, and *Amegas* (available for the Amiga only), and *Vampire's Empire* and *Hollywood Poker* (available for both the Amiga and 64). (Offer expires December 31.)

2ND DISK 50% OFF—OR 3RD FREE

BRIWALL

Briwall, whose ad appears on page 34 of this month's *Ahoy!*, has Christmas gifts for both 64/128 and Amiga users. With every order of ... more, you can ... **Free Spirit's Christmas C...** the C-64 (list price $9.95). Or, with every order of $100 or more, take a **free copy of Free Spirit's Christmas Classics** for the Amiga (list price $14.95). Call Briwall toll free for more information: 800-638-5757. (Offer expires December 31.)

FREE DISKS



SunRize Industries' *Color Splitter* allo... *Digi-View* and *Perfect Vision* users to digitize color pictures from VCRs or color cameras without using color filters. As you can see in SunRize's ad on the inside back cover of this month's *Ahoy!'s AmigaUser*, it retails at $99.95. But *Ahoy!* Access Club members who order direct from SunRize **save 25%**—they pay only $75.00! For more information on the *Color Splitter*, or such other SunRize products as *Perfect Sound, Studio Magic*, or *Desktop Artist*, call 409-846-1311. (Offer expires December 31.)

SAVE 25%

... ter He... *ble*. (See their ad on page 44 of ... month's *Ahoy!*) Their special fall price on the $164.95 package is $129.95. But for *Ahoy!* Access Club members they're going **$10 lower**—to just $119.95 (plus $4.00 postage and handling). And that price, available to our members only, is the **lowest advertised anywhere**. (Offer expires December 31.)

$10 OFF

... syste... at serial spe... (we *did tell* you about ... back in our April *Reviews* se... you can't make up for lost time. But if you buy *RapiDOS* or *RapiDOS Professional* now, Chip Level w... in a **free *Parallel Util*...** **regular $24.95** ... sentially th... *Mas*...

... December 31.)

FREE $25 ...

Central Coast

Once again, Central Coast Software invites *Ahoy!* Access Club members who own the *Quarterback* hard disk backup utility to upgrade to version 2.0. (At press time, this upgrade offer was still **available exclusively through the *Clipper*.**) Send your original *QB* disk, along with this coupon and a check or money order for $15.00 (MC and VISA also accepted). For more information on *Quarterback* and other Central Coast products, see their ad on page 7 of this month's *Ahoy!'s AmigaUser*. (Offer good indefinitely.)

UPGRADE



SOGWAP's *Big Blue Reader* ... grams ... full details, see SOGWAP's ad on page 29 of the December *Ahoy!* (or our review in the June '87 *Ahoy!*). *Ahoy!* Access Club members receive a **20% discount** on the price of both the 128 and 64 versions. The retail price of *Big Blue Reader 128* is $44.95; you pay $35.95. And while the rank and file pay $29.95 for *Big Blue Reader 64*, you pa... $23.95. (Offer expires Decembe...

20% OF...

Lyco C...

The ... dr... than the ... a separate power supply, which allows it to remain cool. It is faster, quieter, and more reliable, and comes with a full one-year warranty. A guide light is available as an option. The price of the drive in Lyco's ad on pages 4 and 5 of the December *Ahoy!* is $149.95. But when *Ahoy!* Access Club members prepay (via check, money order, or credit card), they receive **free shipping!** (Offer expires December 31.)

FREE SHIPPING

Computer Repeats

Computer Repeats continues to offer a **20% higher trade-in allowance** to *Ahoy!* Access Club members. Nonmembers must buy hardware from Computer Repeats at the prices listed in the ad on page 55 of the December *Ahoy!* But your prices are:

Amiga 500: $199 with trade-in of your C-128 computer, 1571 drive, and 1902 monitor; or, $355 with your C-64 computer, 1541 drive, and 1702.

Commodore 128D: $209 with trade-in of your C-128 and 1571, or 64C computer, 1541 and 1702.

Amiga 2000: $1189 with trade-in of your Amiga 500.

Call 303-939-8144 for a price quote for your particular system. Mention your membership in the *Ahoy!* Access Club. Then, when you ship your equipment for trade-in, include this coupon. (Offer expires December 31.)

20% HIGHER TRADE-IN

Creative Computers

Again this month, Creative Computers (see pages 10 and 11 of the December *Ahoy!'s AmigaUser*) is offering a discount on their entire line of Amiga products. With every order of $50 or more placed by an *Ahoy!* Access Club member, Creative Computers will extend a **5% discount**, and provide **free shipping** to anywhere in the Continental US. This offer is good on mail orders only; you must include this coupon; only one order per coupon is allowed; and you may not combine this offer with any other Creative Computers discount offer. For more information, call 213-370-2009. (Offer expires December 31.)

5% OFF; FREE SHIPPING

Use Original Coupon Only

Facsimiles will not be accepted

SPOC

SPOC's ad on page 39 of th... month's *Ahoy!'s AmigaUser* off... their disk of 35 family-oriented ga...e and educational programs, plus a bonus disk containing samples from their library of public domain programs (reworked to run bug-free and without use of the CLI). The SPOCPD collection normally sells for $20.00; but *Ahoy!* Access Club members can obtain the entire collection for only $15.00. (Offer expires December 31.)

$5.00 OFF



clipper

WELCOME ABOARD THE CLIPPER!

Bound into all subs... er copies of *Ahoy!* and *Ahoy!'s AmigaUser*, *The Clipper* offers dis... t prices and other special deals on merchandise sold at full p... lsewhere in the magazine. These offers are available only to ... s of the *Ahoy!* Access Club! (That includes you—because ... embership is free for the duration of any subscription paid ... to December 31, 1988.)

To take advantage ... offers below, simply fill in the information requested o... the coupon, then clip it and mail it with your check or mo... the original coupon only—photocopies and facsimile... ccepted.

Software Support

Software Support's *Kracker Jax* parameter copying system is already offered at a bargain price: Volumes 1-4 for $9.95 each, and 5-7 for $19.95 each (see pages 24 and 25). But that's for the general public—not for *Ahoy!* Access Club members.

... you **buy any two Volumes,** you can t... **one free**. You can mix and match ... any way you want—even buy two ... Volumes and get a $19.95 one free. ... n offer that needs no candy coat... page 25 for postage and hand... ges. (Offer expires October 31.)

BUY 2— ...T 1 FREE

Q-Link

... ad on page 55 t... free modem a... ink, the leadi... vice. That's ... ink is swe... ccess Clu... ck's Ca... or $7.5... t o... er... d

P.A.V.Y.

...t *Landmark, The Com*... *Bible* are a devoted bu... any doubts, see their ... ast month's *Flotsam* ... its base of satisf... is offering a fal... ackage—only ... age 11). ... ess Club ... that sp... 00 p... pric... D...

... Computer

SP1000VC printer is ... compatible—no ... is required. It o... acters per seco... cps in Near ... via a co... In addi... t matri... ard). ... ady ... ce

GET ACCESS TO SOME WITH THE *AHOY!*

Subscribing to *Ahoy!* and/or *Ahoy!'s AmigaUser* has always made sense—for you and for us. We get to keep more of your money when we cut out the middlemen (our distributor and your newsdealer), and we kick some of the savings back to you with a discount rate.

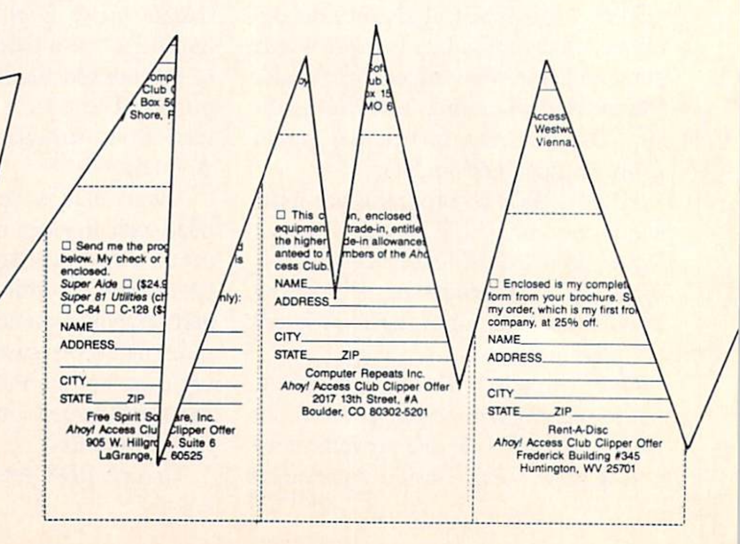
And now you can save even more—in fact, you can save the cost of your subscription many times over!

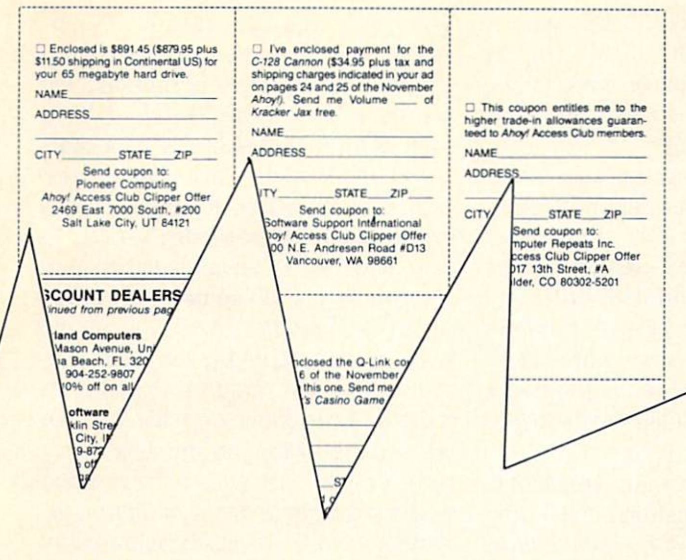
The *Ahoy!* Access Club, launched in January 1986, has been expanded to offer its members even more clout in the Commodore marketplace. Here are some of the ways the *Ahoy!* Access Club can boost your buying power:

• The *Ahoy!* Access Club *Clipper*, published 12 times a year, contains exclusive discount offers on products advertised in *Ahoy!* and *Ahoy!'s AmigaUser*. Participating vendors offer reductions of 10%, 20%, 30%, or more on selected items, free bonus merchandise, and special closeout and combo offers not advertised elsewhere—all for Club members only!

• The *Ahoy!* Access Club Card is your ticket to discounts at participating computer software, hardware, and book dealers, and reduced admission at Commodore and Amiga conventions and swap meets across North America. (Details are found in each issue of the *Clipper*.)

• The *Ahoy!* Access Club BBS (modem required) offers continuously updated information on new offers available through the Club, as well as late-breaking industry news, corrections and updates to articles in *Ahoy!* and *Ahoy!'s AmigaUser*, and free electronic mail facilities. Operation is 24 hours a day, 7 days a week—for Club members only!







MORE SALES UNFURLED!

Bound into all subscriber copies, *The Clipper* offers discount prices and special deals on merchandise sold at full price elsewhere in *Ahoy!* and *Ahoy!'s AmigaUser*. These offers are available only to members of the *Ahoy!* Access Club. (You're a member for the duration of any subscription paid for prior to December 31, 1988.)

Some of the offers are cross-referenced to ads in the November *Ahoy!* or *Ahoy!'s AmigaUser*. If you subscribe to only one of the two magazines and require information that appears in the other, contact the manufacturer directly using the address or phone number provided.

To take advantage of any of the offers on these pages, fill in the information requested on the back of the coupon, then clip it and mail it with the payment indicated. Use the original coupon only—photocopies or facsimiles will not be accepted.

Central Coast Software

On page 45 of this month's *Ahoy!'s AmigaUser* you can read about Quarterback, Central Coast Software's hard disk backup utility. We're pleased that Central Coast has chosen the Clipper as its forum for announcing, for the **first time anywhere**, an offer to all registered *QB* users to **upgrade to the new Version 2.0**. The new software can back up a hard disk to any AmigaDOS file structured device that has a standard mountlist entry. In particular, *QB* V. 2.0 now supports C Ltd.'s Konica 10.7MB high density floppy drive, Inner Connection's Bernoulli drive, and CSA's streaming tape drive. *QB* V. 2.0 also offers a two-drive restore. *Ahoy!* Access Club members can upgrade by sending in their original *QB* disk, along with this coupon and a check or money order for $15.00 (MC and VISA also accepted). (Offer good indefinitely.)

UPGRADE OFFER

Lyco Computer

Rebates worked ... industry ... Lyco ... month's PC com... Ahoy! Access ... the computer ... of $689.95 will re... Or buy a 64C with ... at the advertised price ... rebate. Lyco can be ... 800-233-8760; outside Con... US, 717-494-1030 (Offer expires ... ber 30.)




In a competing magazine, LightSpeed Distribution is offering a special on a 50 meg hard drive featuring the Pacific Peripherals OverDrive controller (see review starting on page 42 of this month's *Ahoy!'s AmigaUser*). The drive autoboots from Workbench 1.3 in 28 milliseconds, with Direct Memory Access. The special price is $769 ... Our ... **price** too— ... **Day air shipping** ... See LightSpeed's ad on ... of this month's *Ahoy!'s AmigaUser*, and feel free to dial their toll free customer support number (800-525-4428) for more details. (Offer expires November 30.)

SPECIAL PRICE FREE SHIPPING

MONTGOMERY GRANT

Montgomery Grant offers such a wide selection of popularly priced hardware and accessories (see page 5 in this month's *Ahoy!*) that you should be able to find something you can't resist. If you do, and your order totals over $100, include this coupon (or mention the *Ahoy!* Access Club if ordering by phone). You'll receive a **free piece of C-64 game software**. Call 800-759-6565 to order; outside the US call 718-692-0071. (Offer expires November 30.)

FREE GAME

REAL BUYING POWER... ACCESS CLUB!

If you are presently a subscriber to *Ahoy!* or *Ahoy!'s AmigaUser*, your membership has already been activated. You'll find the *Ahoy!* Access Club *Clipper* bound into the front of every issue of *Ahoy!* or *Ahoy!'s AmigaUser*.

If you're not a subscriber, fill out and return the postpaid card bound between pages 50 and 51 today!

Let everyone else pay list price. You don't have to...when you have Access!

Comp-U-Save

... designed by Bill's ... board for the Amiga 500 or 1000 that expands either machine to 12 slots. It fits in any baby AT case and provides 6 slots for the 2000, 6 for the PC (4 of those for the AT). Our review of it starting on page 48 of the November *Ahoy!'s AmigaUser* is a real scoop—it's so new it's not even included in Comp-U-Save's ad on page 45. But it's **advertised here for the first time anywhere**. The price is $495. (Offer good ...)

... and send the ... card and sales receipt to Discovery. They'll send you a coupon good for **50% off** the suggested retail price ... Arkanoid, or Virus Infection ... buy any of the trio ... see Discov...

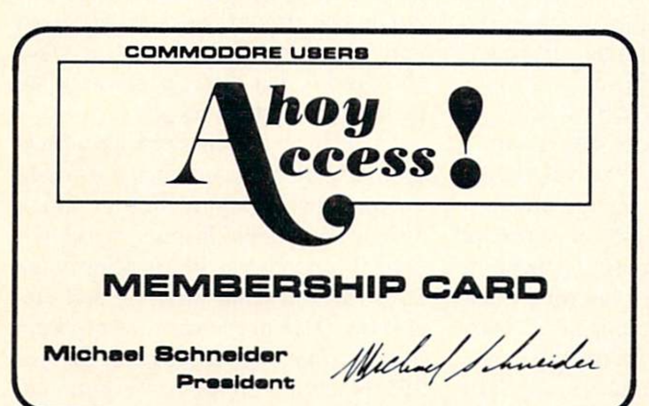
...PANDER

RENT-A-DISC

Rent-A-Disc leases hundreds of entertainment, productivity, and utility programs for the 64/128, Amiga, and other systems. (See their ad on page 11 of the November *Ahoy!*)

Call 304-529-3232, or fill out the back of this coupon and return it, to request Rent-A-Disc's free brochure. When you place your first order you'll receive **25% off the total price**, whatever the amount—provided that it's your first order from Rent-A-Disc. (Offer expires November 30.)

25% OFF



...r Repeats

...puter Repeats ... made in last ... Club ... Amiga 2000 ... on page 12 of the ... your prices are as follows: ... 500: $199 with trade-in of your ... puter, 1571 drive, and 1902 ... 355 with your C-64 com... and 1702 ... $209 with trade-in ... 71 or 64C compu... th trade-in of ... quote for ... your ... Club ... for ... include ... vember 30.)

...% HIGHER TRADE-IN

...!DISK

...ders enjoy typing our ...th—but many others ... to each month's col... utilities as soon as ... in the latter group ... hich contains all ... issue (including ... ares routines) ... notional items ... e often show ... as the free ... of October's disk). If you've never ... monthly disk, you don't kno... easure it is to simply load an... get you hooked, we're offering ... th's (or any month's) *Ahoy!* Dis... only $4.95—that's **$4.00 off the regular $8.95** price. If you prefer, take one of our **$10.95 Anthology Disks for $6.95**. Indicate your choice on the coupon on page 52. Send this coupon along with that coupon, and your check or money order. This special price is good for mail orders only, and for only one disk per customer. (Offer expires November 30.)

$4.00 OFF

Renew or extend your subscription before December 31 to lock in free membership in the *Ahoy!* Access Club for as long as you wish.

SOFTWARE SUPPORT INTERNATIONAL

The *C-128 Cannon*, a high caliber ... and utilities package, and the ... library of parameter copiers received ... marks when reviewed in *Ahoy!* On page 25 of this month's *Ahoy!*, Software Support advertises the *Cannon* for $34.95 and the seven *Kracker Jax* volumes for $9.95 to $19.95 each. But when *Ahoy!* Access Club members buy the *Cannon* at the regular price, they can **take any Kracker Jax disk free**. (Offer expires November 30.)

FREE DISK

Q-Link

... ad on page 6 of the November ... Q-Link tells you how to receive a ... modem and membership kit for their top-rated Commodore online service. That attractive deal is available to anyone—but for *Ahoy!* Access Club members only, Q-Link continues last month's offer of a **free Rabbitjack's Casino Game Disk**. The software, sold for $7.50, lets you play slots, blackjack, poker, and other games of chance with fellow Q-Linkers. Send this coupon along with the coupon from Q-Link's ad on page 6; or, call 800-782-2278/ext. 1480. (Offer expires December 15.)

FREE DISK

Creative Computers

Look at the dizzying array of software and hardware offered in Creative Computers' spread on pages 10 and 11 of this month's *Ahoy!'s AmigaUser*. Are you dizzy yet? Now, to really make your head spin! With every order of $50 or more placed by an *Ahoy!* Access Club member, Creative Computers will extend a **5% discount, and provide free shipping** to anywhere in the Continental US. This offer is good on mail orders only; you must include this coupon; only one order per coupon is allowed; and you may not combine this offer with any other Creative Computers discount offer. For more information, call 213-370-2009. (Offer expires November 30.)

5% OFF; FREE SHIPPING

PIONEER COMPUTING

Pioneer's ad on page 73 of this month's *Ahoy!'s AmigaUser* offers a 65 megabyte hard drive for $949.99. For the general public, that is. For you, as an *Ahoy!* Access Club member, the price is $879.99—which happens to be what the general public pays for a 40 meg drive. Where else can you get **25 megabytes of memory free?** Add $11.50 for shipping anywhere in the Continental US; if you live elsewhere, call Pioneer at 801-942-1174 for instructions. (Offer expires November 30.)

25 MEGS FREE

DISCOUNTS FOR HOLDERS OF THE



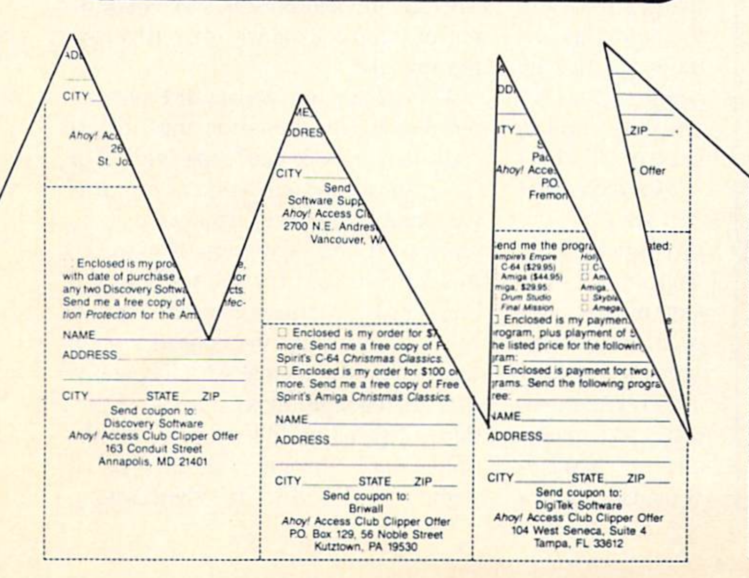
The following retail outlets are offering special discounts to holders of the *Ahoy!* Access Club Card. If you don't live near one of these dealers, show this page to the proprietor of your local store. Tell him he can be listed at no charge in the February '89 *Clipper* if he contacts us by November 1. Be sure to have him mention your name—because if he comes into the *Clipper*, we'll extend your subscription by three issues.

Davis Micro Works Discount Software
3484 The Alameda
Santa Clara, CA 95050
Phone: 408-243-1565
Offer: 10% discount on all merchandise. Both Amiga and 64/128 products are available.

FRC Basic Systems
314 Fort Lee Road
Leonia, NJ 07605
Phone: 201-944-4940
Offer: 10% discount on all merchandise.

Soft Cell Software Inc.
10910 N.E. Halsey
Portland, OR 97220
Phone: 503-252-DISK
Offer: 10% off already discounted prices on Amiga and 64/128 sales and rentals.

Continued on next page



foot length through horrendously dusty household air. The film tightened as it dried, pulling itself off the nails that held it, and tangling itself into grimy globs on the carpet. As our frantic attempts to "clean" it resulted in festive scratches, the picture flaked off in spots due to the chemistry disturbances.

The result: the cats found the film entertaining. Nobody else.

That was B.A.—"Before Amigas." In the years since, two wonderful things have happened. First, our hapless film has faded, sparing posterity its color blotches. And second, the folks at Gold Disk have shipped a software package named *MovieSetter*. Just add an Amiga and some imagination, and—ZAP!—you're an animator. Previous experience not necessary.

After only the first two hours of playing with *MovieSetter*, I beheld animated results that would have taken Doug and me weeks to accomplish with film, and that's only if we learned our lesson about the processing (we did!). To do my Amiga animation, though, I didn't worry about bumping things, or fuss with big pieces of glass and their inevitable reflections of the copy lights. I didn't calculate any trajectories, or figure any accelerations. I didn't wait for the processing, and I didn't struggle with that infernal loader reel in the dark. *MovieSetter* banishes the drudgery from animation.

MovieSetter produces its animations in the Amiga's low-resolution overscan mode, 352 by 240 pixels. A character which stomps off the screen tromps right through the normal "border" on its way to never-neverland. It works with borders, too, but who cares? Overscan (and other of the program's features) greatly facilitates recording to video.

The program offers numerous tools for achieving animations, including *MovieSetter*, *SetEditor*, *SceneEditor*, and *MoviePlayer*. The *MovieSetter* program, which is designed for one-meg (or more) Amigas, comprises all the other programs, as well as an automated "storyboard" facility.

MovieSetter's term "scene" means a chunk of movie. In a scene, a background is present (or not); action takes place; timing changes happen, sounds occur, palettes change, color cycling is turned on or off, whatever. Only memory and common sense impose any restrictions on the number of events per frame or scene. Many saved "scenes" can be combined into a "Production," since *MovieSetter* and *SceneEditor* permit appending or inserting whole animations (within memory restrictions). The programs will load only the elements of the appended scene that are not already present. Slick.

MovieSetter's SceneEditor program is the electronic equivalent of a motion picture editor's "cutting room." This is where you take the pieces and parts—sounds, backgrounds, and character animations—and edit them together into a whole. With *MovieSetter* running, you can click back to the *SetEditor* for a little last-minute finetuning on a character's expression. Any changes you make instantly affect all frames. I found this to be slightly confusing at first. To get a new "set" of an animated character, you have to do some tricky clicking in the *SetEditor*. After you get the hang of mouseclicking the "sets" into the frames, the program imposes almost no restrictions on what you can do, and makes the job simple at every turn. I could only wish for a size and twisting gadget in the *SceneEditor*, although the effect is easily achieved by making up another set for the purpose.

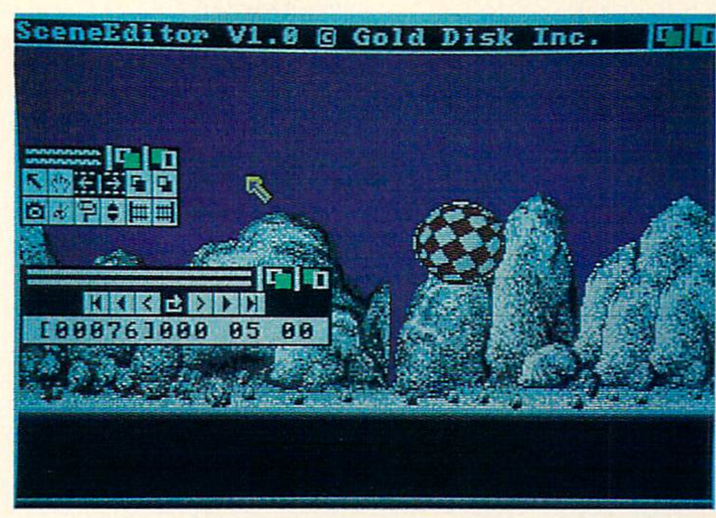
Loop-de-loops

MovieSetter permits automatic looping of sequences to save time and conserve memory. It also has functions for automatically calculating trajectories, acceleration, and scrolling. When you're done, turn on the "interlace" option with a pulldown menu and videotape the results. Too bad business doesn't have many Amigas. The corporate boardroom would go nuts over gorgeous, *MovieSetter*-animated charts and graphs that didn't cost them half their stock options to get.

MovieSetter does not provide a background editor. If you decide to make up some backgrounds, be sure to use 352 by 240 pixels. Inspired by *MovieSetter's* smooth scrolling background, I rushed to a paint program and created one 1024 pixels wide. *MovieSetter* loaded it fine, but scrolled only the first 352 pixels of my huge background. The documentation states this plainly, but of course I read it after I'd made the mistake.

MovieSetter imports any IFF picture, but it saves its animation files in formats that only it can cope with. For quickly saving your work in progress (to forestall disasters), you can use "no embed." If you juggle lots of floppies to assemble your movie, you'll juggle them again to reload from a "no embed" file. However, the "embed" option results in a file format which contains data for backgrounds, sounds, everything. This larger file stands alone; the *MovieSetter* program can play it without asking for any other disks.

The program also offers the thoughtful option of saving the components so you can take an animation apart and reassemble it, even if you don't have the parts to start with. Although *MovieSetter* comes with a disk full of useful clip art, it includes a paltry collection of backgrounds. You can get a few more, as well as some other neat stuff, by loading the demo animations, the ones on dealer demo disks that Gold Disk has distributed. Then save "components." This effort will net you several more backgrounds, more "sets" of animated characters, and a lot more sounds—"CarHorn," "Changunga," and the everpopular "Bucky Says Howdy Hello."



MovieSetter's SceneEditor *program enables the user to transform all the individual pieces of his or her creation into a complete movie.*

Speaking of Sounds

When a *MovieSetter* character falls flat on its cartoon face, the Amiga emits an appropriate "UH!" If your character is a more solid specimen, there's "Crick" or "Thok." Other sounds you might find useful are "Boing!," "Oww," and "Thonk" (not to be confused with "Thok"). The "Orchestra" sound makes a mysterious accompaniment for introducing your main villain.

The program imports standard Amiga IFF (8SVX) sampled sounds and will play them at various pitches through any of the four Amiga sound channels, and in stereo. Stereo samples come out both sides, but a regular sound can be made to "pan." An Amiga Boing ball can thus "Kerplot" its way from left to right of both the screen and the audio at the same time for astounding realism. You can also control volume and pitch. For example, something which bounces off the screen could be heard boinging off into the distance with sounds of decreasing volume.



SceneEditor *turns your Amiga into a motion picture editor's "cutting room." Cut and paste sounds, character animations, and backgrounds.*

No matter how intricate your requirements, timing *MovieSetter's* sound and video is a simple matter. Indeed, for sections that require a lot of sound manipulation, you can multitask the sound synchronizer window.

SetEditor *lets you create objects to animate. After creating the set, you may preview it, animating objects in order of creation.*

Speaking of Multitasking

As a whole, *MovieSetter* takes exemplary advantage of the Amiga's ability to multitask, and it does so in a seamless, effortless manner that has no apparent effect on its ability to play back at full speed. The program multitasks not just with other things, but within itself.

As you go, *MovieSetter* keeps a database of "events" with which to display a "storyboard" of your work. By adjusting the storyboard options, you can quickly scan for color changes, sounds, background changes, etc., thus to navigate through the production easily. Clicking a frame on the storyboard puts you in editing position at that spot on your production. Neat.

The frame rate for animations is adjustable up to 60 per second, and can be changed as an "Event" any number of times during playback. The program defaults to a ten-per-second frame rate, which according to the documentation

is the level at which "most people" cannot distinguish the individual frames. The highest speed is available only if you're willing to use a two color palette. Within *MovieSetter*, the frame rate of playback may be slowed on extremely busy frames. The separate program *MoviePlayer* plays much faster, but *MovieSetter* allows a simple adjustment of the timing if you need to compensate. I saw no slowdown with *MoviePlayer*, even though I had TWELVE separate animated sets running at once, all in 32-color overscan.

Problems? What Problems?

The *MovieSetter* package has few faults. However, it "would be nice" to be able to save sounds back out as reconfigured. Not absolutely necessary, but nice. Also, it "would be nice" to be able to make changes in backgrounds or edit an overlay without loading a paint program, some of which don't work in overscan. It also would be especially nice to be able to make a printout of a frame, a storyboard, or a frame from a "set" of character animations. You could multitask a screen capture utility in the background to accomplish this, however. Adding these things would reduce the amount of data space for productions, so maybe they'd be appropriate, separate utilities.

Another wish—for those non-artists among us, clip art. Particularly premade "sets" of character animations.

The only real "problem" I found was a slightly out of whack behavior of the "brush" tool in *SetEditor*. Selecting any other brush before reselecting the brush tool easily worked around the small oddity, however. The program should also do a bit more memory checking. If the Amiga runs short of RAM, the guru meditates.

Reading the Book

MovieSetter's documentation is a bit skimpy, but it's more than adequate, since the program's user interface is so intuitive and easy to figure out. The documentation's biggest failing is that it begins with a list of features and an "overview," both of which talk about things (like "sets") that haven't been defined. It could also use a bit of spell-checking, but what the heck, nobody's perfect.

My biggest wish is for the program to handle a superbitmap for wider- or taller-than-screen background scrolling. It already loads the image but doesn't scroll it.

One more wish. Music. Sure, you can digitize the music and play it as a sampled sound. With some work, you could even play a tune with the sound events, since the program gives you control over the sound's pitch and octave. I'd rather be able to tell the program to load up an Amiga IFF SMUS file and play it in the background—maybe while the ending titles scroll, for example.

A Word About Memory

Gold Disk has done some very clever things to make *MovieSetter* usable in a 512K Amiga. Indeed, all of the demonstration movies on its program disk were created in 512K with two disk drives, according to the documentation. In 512K, there are some limitations. You have to use the separate programs *SetEditor* and *SceneEditor* to put animations together, and view the finished result with *MoviePlayer*.

MovieSetter makes animation not just easy, but fun, and although it's not the only Amiga animation program on the market, its user interface is the easiest, most intuitive, I've seen so far. At a US list price of $99.95, *MovieSetter* is a bargain, too.

—ZAP— The present reality. No, I haven't REALLY got an animation out that would rival Disney's *Fantasia*, but I'm working on it. Save me an Oscar.

Gold Disk, P.O. Box 789, Streetsville, Mississauga, Ontario, Canada L5M 2C2 (phone: 416-828-0913).

—Jay Gross

Circle #232 on Reader Service Card

Continued from page 36

rect vocal signal input.

The included software, *Sampler/Editor,* is a graphics/mouse interface allowing left, right, or stereo sampling (with rates of up to 28 KHz). Other features include dual real time oscilloscopes (one for each channel), real time spectrum analyzer, and auto record trigger on input level. Up to 10 stereo samples per bank are possible. Samples can be loaded and saved in RAM or IFF data formats. All editing facilities work in mono or stereo, including cut, paste, inset, delete, copy, overlay, reverse, filter, fade in/out, volume up/down, sample shrink/stretch, stereo pan, stereo "bounce," and channel swap.

MIDI support includes selectable MIDI channel, omni/polyphonic operation (with up to four voice poly), and MIDI-controlled sample frequency shift. Each sample in a bank can be assigned to a MIDI note value, or to a MIDI channel range.

MicroDeal, 313-334-5700 (see address list, page 14).
Circle #247 on Reader Service Card

CLI TUTOR

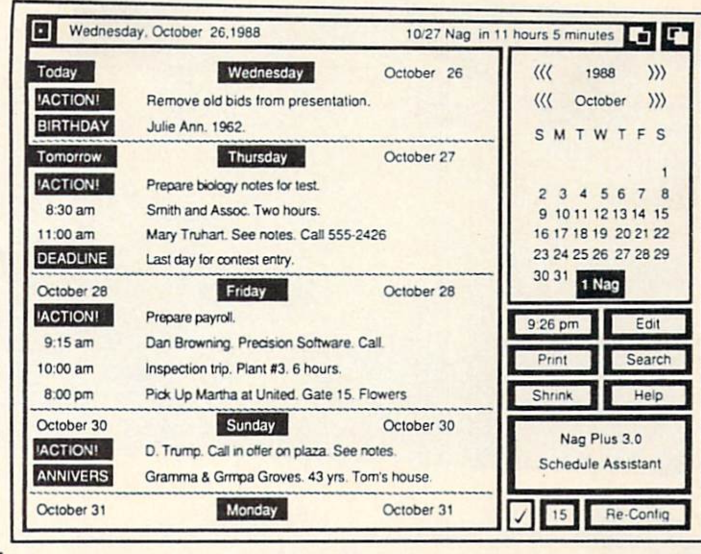
Mastering-CLI v2.0 includes updated versions of the original's Tutor and Assistant programs. The former now offers mouse-controlled text scrolling, revised tutorials, and single file, fast loading tutorials. The latter now contains full screen help windows, a RAM-resident display routine, and a quick reference list of CLI commands accessible by gadget as well as menu. Also new is tinyAssist, a compact version of the Assistant requiring less than half as much memory to run. The upgrade cost to registered users is $5.00 postpaid, which is applicable to the customer's next purchase.

Graphic Expressions, 201-661-0408 (see address list, page 14).
Circle #249 on Reader Service Card

NAG, NAG

The *Nag Plus 3.0* schedule assistant ($79.95) will remind you verbally or visually of up to 99 regular or one-time events per day. Memory-resident, it runs in the background with other Amiga software and synthesizes sounds. One-time entry of events like birthdays places them in the Perpetual Calendar; reminders are then presented in your choice of a screen flash or computerized voice, or as any one of 24 adjustable bells and whistles. The programs report generating facility will print out a list of each day's appointments, or search the appointment database for individual appointment records containing specific key words. Additional features include a text editor for producing phone call notes, memos, or quick correspondence, an online help facility, and an ARexx port for initiating any timed event or action.

Gramma Software, 206-363-6417 (see address list, page 14).
Circle #250 on Reader Service Card



Nag Plus 3.0 ***will not only remind you of a friend's birthday—it will even dial his number for you via modem, then turn the line over to you for voice communication.***

TAX UPDATE

Amiga-Tax has been made available in both US and Canadian versions for tax year 1988. *Amiga-Tax Version 3.0* ($78.55 in Canadian funds, including shipping; Ontario residents add $5.60), for Canadian users, incorporates the changes made in the T1 forms by Tax Reform. *Amiga-Tax/1040* ($74.95 in US funds, including shipping), for Yankees, includes form 1040, schedules A-E, R, SE, IRA calculations, and more. Each program will print in government-approved facsimiles.

Datamax Research (see address list, page 14).
Circle #251 on Reader Service Card

DICTIONARY

Webster's New World Dictionary of Computer Terms ($6.95), a completely revised Third Edition of the paperback first published in 1983, defines 4500 terms in clear, non-technical language. The 412-page volume is geared towards the personal computer user, with its terms selected as those most likely to confront the beginner. Included are descriptions of important software packages and an eight-page conversion table (decimal, binary, etc.).

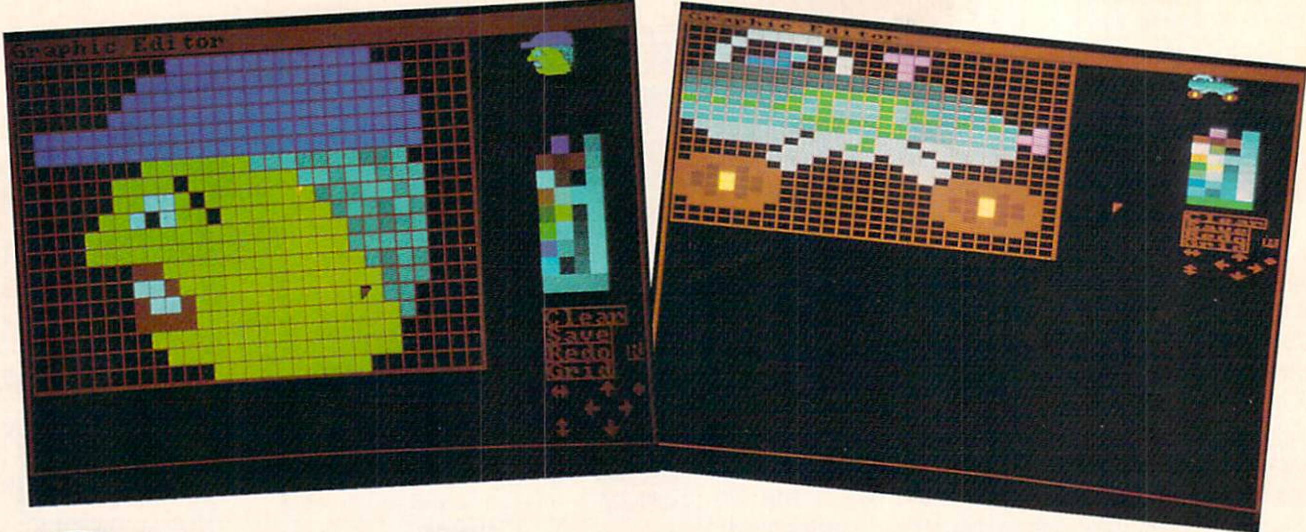
Simon & Schuster, 212-373-8234 (see address list, page 14).
Circle #252 on Reader Service Card

ERRATA

(Corrections to programs and articles published in *AmigaUser* will always appear under this heading in the Table of Contents.)

Some readers have complained about difficulty in distinguishing the letter l from the numeral 1 in our program listings. And well they should—on the daisy wheel used to print many of our past programs, those two characters are identical.

Beginning next issue we'll be using a different daisy wheel that will correct the problem. We'll be happy to forward to you a listing of any program published to date, with the characters in question marked to eliminate confusion. Write to *AmigaUser* Program Listings, Ion International Inc., 45 West 34th Street—Suite 500, New York, NY 10001.



Graphic Editor is a program that will let you edit objects as well as Vsprites. It also lets you take a C-64 sprite and "Amigatize" it (add a lot more color!). This program was inspired by the Object Editor that was included on the Amiga Extras disk.

Type in, save, and run the program. After a slight delay, you will be asked to choose the resolution of your screen. Move the mouse pointer over to any resolution box and click the left mouse button. Now you will be asked to type in the depth of the screen. For the 640 resolution modes, a depth between 1 and 4 can be chosen. For the 320 modes, a depth between 1 and 5 can be chosen. After you have chosen the depth, a number of screen windows will flash in and out. After the flashing is done, you will be asked to size the magnified part of your object. Just how big an object depends on the resolution of your screen. Here is a table to show you the maximum sizes:

320 X 200 – a 32 X 23 pixel object
320 X 400 – a 32 X 46 pixel object
640 X 200 – a 64 X 23 pixel object
640 X 400 – a 64 X 46 pixel object

If you don't see a box, click in the middle of the window and one should appear. By holding down the left mouse button and moving the mouse around, you can make the box different sizes. Once you have the size you want, press RETURN. (If a question appears on the screen, type N (No) for now; I will explain the question below.) Your sized box will appear on the left, along with a color palette and various "Gadgets" and function boxes.

Move the mouse pointer over to one of the palette color boxes and click the left mouse button. Just under the color palette is a box showing which color you are currently using. Move the mouse inside the box you just sized and press the left mouse button. A magnified pixel is placed where the mouse pointer is. In the upper right corner of the window, another pixel is placed. This is where the actual sized object is located. Holding down the left mouse button draws continuous pixels.

Just under the color indicator are four boxes with a word in each. These are the main functions of the editor. Moving the mouse pointer to the "CLEAR" box and clicking the left mouse button clears both object drawing areas. Moving to the "SAVE" box and clicking the left mouse button saves your object in a variety of formats. First, type in the filename for the object data file. If you want to cancel, just press RETURN without typing anything. Now you will be asked if you want to save the object as BOB data or PUT data (to be used with the BASIC PUT statement). If you chose PUT data, your data will be saved as data statements; the DIM and FOR-NEXT loop to read in the data are already supplied. It also makes a label taken from the data filename. So, to use the object data you would:

```
GOSUB filename
PUT (0,0),filename%
```

That's all!

If you chose BOB data, you have a few more options.

The next question will be if you want to save the object as a sprite instead of a BOB. (Note: In order to save the object as a sprite, you must have chosen a depth of 2 or 1. Also, the sprite can't be more than 16 pixels wide. Otherwise the program will automatically save it as a BOB.)

To use the object binary data you would:

```
' GRAPHIC EDITOR  V1.0
' By  Matt Childress
' HOLLAND,  MI
'Set up memory and "Gadgets"
CLEAR ,21000
DIM object%(2000),grid1%(7),grid2%(7),sp%(235)
DIM circl%(13)
  FOR x=0 TO 13
    READ A$:A=VAL("&H"+A$)
    circl%(x)=A
  NEXT
 DATA B,B,1,0,0,C00,1E00,3F00,3F00,1E00
 DATA C00,0,0,0
DIM fliplr%(13)
  FOR x=0 TO 13
    READ A$:A=VAL("&H"+A$)
    fliplr%(x)=A:NEXT
 DATA B,B,1,1F,1F,121F,331F,7F80,7F80,3300
 DATA 1200,0,0,0
DIM flipud%(13)
```

GRAPHIC EDITOR

Animate and edit BOBs and sprites in any screen depth and resolution.

By Matt Childress

Important! See the note on page 40 regarding entering programs printed in *AmigaUser.*

```
OPEN "filename" FOR INPUT AS 1
a$=INPUT$(LOF(1),1)
CLOSE 1
OBJECT.SHAPE 1,a$
```

The last question asks if you want the BOB or sprite in data statements to be merged with your program. The format for using a BOB or sprite is almost identical to the PUT data statements, except the data is returned as a string:

```
GOSUB filename
OBJECT.SHAPE 1,filename$
```

Real easy!

The next function box is the "REDO" box. This lets you resize the object. To the right of this box is a reversed "R". Moving the mouse pointer over to this and clicking the left mouse button starts the program over. Now we get to the final function box, the "GRID" box. This puts a grid in the magnified object box, letting you see and space out pixels better.

Now, about the "Gadgets." Under the four boxes are the "Shift" gadgets. These shift the object one pixel in the direction of the arrow. To the left of the four arrow gadgets are the flip gadgets. These flip the object back and forth in the direction of the arrows.

To the right of the four arrows is a small filled circle. ve the mouse pointer over to this and press the left mouse A new window will appear. In this window you can bject around by pressing and holding the left n and moving the mouse. You can "Stamp" your here in the window by pressing the space_bar. vith your object, Press "D". To stop drawing, press "D" again. To Clear the window, press "C". To quit and go back to the editor (you have to be out of draw mode), press "Q".

```
0 13
:A=VAL("&H"+A$)
(x)=A:NEXT
,1F,C1F,1E1F,3F1F,C00,C00,3F00
C00,0,0
OW%(13)
0 13
:A=VAL("&H"+A$)
OW%(x)=A:NEXT
```

Now, about the question that came up if you chose an object greater than 24 by 21 pixels. This is a feature that lets you take a C-64 sprite and translate it for use, so you can "Amigatize" it (add lots of color). The data statements are placed at the end of the program.

The data can be in hex or decimal numbers. The sprite translator supports single and multicolor sprites. It does not support x and y expansion of the sprite. □

```
 DATA B,B,1,0,800,1800,3800,7F00,7F00,3800
 DATA 1800,800,0,0
DIM RIGHTARROW%(13)
  FOR x=0 TO 13
    READ A$:A=VAL("&H"+A$)
    RIGHTARROW%(x)=A:NEXT
 DATA B,B,1,0,400,600,700,3F80,3F80,700
 DATA 600,400,0,0
DIM UPARROW%(13)
  FOR x=0 TO 13
    READ A$:A=VAL("&H"+A$)
    UPARROW%(x)=A:NEXT
 DATA B,B,1,0,C00,1E00,3F00,7F80,C00,C00
 DATA C00,0,0,0
DIM DOWNARROW%(13)
  FOR x=0 TO 13
    READ A$:A=VAL("&H"+A$)
    DOWNARROW%(x)=A:NEXT
 DATA B,B,1,0,0,C00,C00,C00,7F80,3F00
 DATA 1E00,C00,0,0
'Define pattern for Quick clearing of grid
FOR x=0 TO 7
  grid1%(x)=&HFFFF
NEXT
grid2%(0)=&HFFFF
FOR x=1 TO 7
  grid2%(x)=&H8080
NEXT
'Get resolution of screen by user
CLS
  LINE (34*8-1,3*8-2)-(43*8+1,3*8+8),1,b
  LINE (34*8-1,5*8-2)-(43*8+1,5*8+8),1,b
  LINE (34*8-1,7*8-2)-(43*8+1,7*8+8),1,b
  LINE (34*8-1,9*8-2)-(43*8+1,9*8+8),1,b
LOCATE 1,12
  PRINT"Point to screen resolution and click left button on mouse."
LOCATE 4,35
  PRINT "320 x 200"
LOCATE 6,35
  PRINT "640 x 200"
LOCATE 8,35
  PRINT "320 x 400"
LOCATE 10,35
  PRINT "640 x 400"
'Define variables for grid and object size.
scrloop:
  A=MOUSE(0)
  x=INT(MOUSE(5)/8)
  y=INT(MOUSE(6)/8)
  IF A=0 THEN scrloop
  IF y=3 AND (x>34 AND x<44) THEN
    sm=1:shorz=320:svert=200:sm1=1:sm2=1:g1=32:g2=23
    GOTO scrloopA
  END IF
  IF y=5 AND (x>34 AND x<44) THEN
    sm=2:shorz=640:svert=200:sm1=2:sm2=1:g1=64:g2=23
    GOTO scrloopA
  END IF
  IF y=7 AND (x>34 AND x<44) THEN
    sm=3:shorz=320:svert=400:sm1=1:sm2=2:g1=32:g2=46
    GOTO scrloopA
  END IF
  IF y=9 AND (x>34 AND x<44) THEN
    sm=4:shorz=640:svert=400:sm1=2:sm2=2:g1=64:g2=46
    GOTO scrloopA
  END IF
GOTO scrloop
'Get depth of screen from user
scrloopA:
  LOCATE 12,30
    PRINT "                              "
  LOCATE 12,30
    INPUT "Depth of screen:";depth
  IF depth=0 THEN RUN
  IF shorz=320 AND (svert=200 OR svert=400) THEN
     IF (depth<1 OR depth>5) THEN scrloopA
  END IF
  IF shorz=640 AND (svert=200 OR svert=400) THEN
     IF (depth<1 OR depth>4) THEN scrloopA
  END IF
    SCREEN 1,shorz,svert,depth,sm
    WINDOW 1,"Graphic Editor",,0,1
    SCREEN 2,320,200,depth,sm
    WINDOW 2,"Doodle Window",,0,2
```

```
  DIM r(15),g(15),b(15)
  FOR w=1 TO 2
  WINDOW w
    RESTORE ColorData
    FOR c=0 TO 15
      READ r,g,b
      r(c)=r:g(c)=g:b(c)=b
      PALETTE c,r/15,g/15,b/15
    NEXT
  NEXT
  WINDOW 1
'First 16 colors defined
ColorData:
  DATA 0,0,0
  DATA 13,0,0
  DATA 15,15,15
  DATA 15,6,0
  DATA 0,9,0
  DATA 3,15,1
  DATA 0,0,15
  DATA 2,12,13
  DATA 15,0,12
  DATA 10,0,1
  DATA 9,5,0
  DATA 15,12,10
  DATA 15,15,0
  DATA 12,12,12
  DATA 8,8,8
  DATA 4,4,4
'message to size grid
GL:
  CLS
  LOCATE 4,1
    PRINT "Use mouse to size grid."
  LOCATE 5,1
    PRINT "Press RETURN to keep size."
  FOR L=1 TO 6000/sm
  NEXT
  CLS
'Routine to size grid with mouse
gridloop:
  b=x:c=y
    A=MOUSE(0)
    y=INT(MOUSE(5)/8)
    x=INT(MOUSE(6)/8)
  k$=INKEY$
  IF k$=CHR$(13) THEN gridc
  IF A=0 THEN gridloop
  IF y>g1 OR y<1 THEN LINE (0,0)-(g1*8,g2*8),0,BF:GOTO gridloop
  IF x>g2 OR x<1 THEN LINE (0,0)-(g1*8,g2*8),0,BF:GOTO gridloop
    LOCATE 1,g1+3:PRINT "R^";x
    LOCATE 2,g1+3:PRINT "C>";y  0
  LINE (0,0)-(c*8,b*8),0,b
  LINE (0,0)-(y*8,x*8),1,b
GOTO gridloop
'Check if can translate sprite
gridc:
  CLS
  IF y>23 AND x>20 THEN GOSUB TranslateSprite
  LINE (0,x*8+1)-(y*8+1,x*8+1),1
  LINE (y*8+1,0)-(y*8+1,x*8+1),1
  x1=x:y1=y
  LINE(259+y1,0)-(259+y1,x1),0,BF
'Put color palette on screen
Extras:
  dep=2^depth
  IF dep>8 THEN otherloop
  FOR x=1 TO dep
    LOCATE x+6,g1+2:COLOR 0,x-1:PRINT " "
  NEXT
GOTO stuff
otherloop:
  FOR y=0 TO INT((dep-1)/8)
    FOR x=0 TO 7
      LOCATE x+7,g1+y+2:COLOR 0,x+y*8:PRINT " "
    NEXT
  NEXT
stuff:
'put Function boxes and "Gadgets" on screen
 COLOR 1,0
  LOCATE 17,g1+2
    PRINT "Clear"
    LINE((g1+1)*8-1,16*8-1)-((g1+6)*8,17*8-1),1,b
  LOCATE 18,g1+2
```

```
    PRINT "Save"
    LINE((gl+1)*8-1,17*8-1)-((gl+5)*8,18*8-1),1,b
  LOCATE 19,gl+2
    PRINT "Redo"
    LINE((gl+1)*8-1,18*8-1)-((gl+5)*8,19*8-1),1,b
  LOCATE 20,gl+2
    PRINT "Grid"
    LINE((gl+1)*8-1,19*8-1)-((gl+5)*8,20*8-1),1,b
  LOCATE 19,gl+7
    COLOR 0,1
    PRINT "R"
    COLOR 1,0
  PUT ((gl+4)*8,20*8),UPARROW%
  PUT ((gl+3)*8,21*8),LEFTARROW%
  PUT ((gl+5)*8,21*8),RIGHTARROW%
  PUT ((gl+6)*8,20*8),circl%
  PUT ((gl+4)*8,22*8),DOWNARROW%
  PUT ((gl+1)*8,20*8),fliplr%
  PUT ((gl+1)*8,22*8),flipud%
'Main routine for checking mouse
checkmouse:
  A=MOUSE(0)
  IF A=0 THEN checkmouse
  y=INT(MOUSE(5)/8):x=INT(MOUSE(6)/8)
  IF y<yl AND x<xl THEN Pixel
  IF (y>gl AND y<gl+5) AND (x>5 AND x<14) THEN
    f=POINT(y*8,x*8)
    COLOR 0,f
    LOCATE 15,gl+2
    PRINT "    "
    COLOR 1,0
    END IF
  IF (y>gl AND y<gl+6) AND x=16 THEN clr
  IF (y>gl AND y<gl+5) AND x=17 THEN MakeImageData
  IF (y>gl AND y<gl+5) AND x=18 THEN gx=0:GOTO GL
  IF (y>gl AND y<gl+5) AND x=19 THEN grid
  IF y=gl+6 AND x=18 THEN RUN
  IF y=gl+4 AND x=20 THEN shiftup
  IF y=gl+4 AND x=22 THEN shiftdown
  IF y=gl+3 AND x=21 THEN shiftleft
  IF y=gl+5 AND x=21 THEN shiftright
  IF y=gl+1 AND x=20 THEN fliplr
  IF y=gl+1 AND x=22 THEN flipud
  IF y=gl+6 AND x=20 THEN tryit
GOTO checkmouse
'let user try object
tryit:
  GET (259*sml,0)-(259*sml+gl,g2),object%
  WINDOW 2
getloop:
  A=MOUSE(0):y=MOUSE(5):x=MOUSE(6)
  k$=INKEY$
    IF k$=" " THEN PUT (y-yl,x-xl),object%,OR
    IF k$="c" OR k$="C" THEN CLS
    IF k$="d" OR k$="D" THEN draw=1-draw
    IF draw=1 THEN PUT (y-yl,x-xl),object%,OR:GOTO getloop
    IF k$="q" OR k$="Q" THEN WINDOW 1:GOTO checkmouse
   ty=y:tx=x
  PUT (y-yl,x-xl),object%
  PUT (y-yl,x-xl),object%
GOTO getloop
'flip object from left-right or right-left
fliplr:
  FOR xf=0 TO xl-1
    FOR yf=0 TO yl-1
      po=POINT(yf*8+2,xf*8+2)
      PSET (259*sml+(yl-1)-yf,xf),po
    NEXT
  NEXT
  PATTERN &HFFFF,gridl%
  FOR xf=0 TO xl-1
    FOR yf=0 TO yl-1
      po=POINT(259*sml+yf,xf)
      LINE (yf*8+1,xf*8+1)-(yf*8+7,xf*8+7),po,BF
    NEXT
  NEXT
  GOTO t
'flip object up-down or down-up
flipud:
  FOR yf=0 TO yl-1
    FOR xf=0 TO xl-1
      po=POINT(yf*8+2,xf*8+2)
      PSET (259*sml+yf,(xl-1)-xf),po
    NEXT
  NEXT
  PATTERN &HFFFF,gridl%
  FOR xf=0 TO xl-1
    FOR yf=0 TO yl-1
      po=POINT(259*sml+yf,xf)
      LINE (yf*8+1,xf*8+1)-(yf*8+7,xf*8+7),po,BF
    NEXT
  NEXT
t:
  IF gx=1 THEN PATTERN &HFFFF,grid2%
  A=MOUSE(0):y=MOUSE(5):x=MOUSE(6)
GOTO checkmouse
'shift object one pixel up
shiftup:
  GET (0,0)-(yl*8,8),object%
  SCROLL (0,0)-(yl*8,xl*8),0,-8
  PUT (0,xl*8-8),object%,PSET
  GET (259*sml,0)-(259*sml+yl,0),sp%
  SCROLL (259*sml,0)-(259*sml+yl,xl-1),0,-1
  PUT (259*sml,xl-1),sp%
  GOTO aaa
'shift object one pixel down
shiftdown:
  GET (0,xl*8-8)-(yl*8,xl*8),object%
  SCROLL (0,0)-(yl*8,xl*8),0,8
  PUT (0,0),object%,PSET
  GET (259*sml,xl-1)-(259*sml+yl,xl-1),sp%
  SCROLL (259*sml,0)-(259*sml+yl,xl-1),0,1
  PUT (259*sml,0),sp%
  GOTO aaa
'shift object one pixel left
shiftleft:
  GET (0,0)-(8,xl*8),object%
  SCROLL (0,0)-(yl*8,xl*8),-8,0
  PUT (yl*8-8,0),object%,PSET
  GET (259*sml,0)-(259*sml,xl-1),sp%
  SCROLL (259*sml,0)-(259*sml+yl-1,xl-1),-1,0
  PUT (259*sml+yl-1,0),sp%
  GOTO aaa
'shift object one pixel right
shiftright:
  GET (yl*8-8,0)-(yl*8,xl*8),object%
  SCROLL (0,0)-(yl*8,xl*8),8,0
  PUT (0,0),object%,PSET
  GET (259*sml+yl,0)-(259*sml+yl-1,xl-1),sp%
  SCROLL (259*sml,0)-(259*sml+yl-1,xl-1),1,0
  PUT (259*sml,0),sp%
aaa:
  A=MOUSE(0):A=MOUSE(5):A=MOUSE(6)
GOTO checkmouse
'put pixel on screen
Pixel:
  PATTERN &HFFFF,gridl%
    LINE(y*8+1,x*8+1)-(y*8+7,x*8+7),f,BF
    PSET (259*sml+y,x),f
  IF gx=1 THEN PATTERN &HFFFF,grid2%
GOTO checkmouse
'clear area's
clr:
  LINE (259*sml,0)-(259*sml+yl,xl),0,BF
  LINE (0,0)-(yl*8,xl*8),gx,BF
GOTO checkmouse
'turn grid on off
grid:
  gx=1-gx
  FOR gr=0 TO xl
    LINE (0,gr*8)-(yl*8,gr*8),gx
  NEXT
  FOR gr=0 TO yl
    LINE (gr*8,0)-(gr*8,xl*8),gx
  NEXT
  IF gx=0 THEN PATTERN &HFFFF,gridl%
  IF gx=1 THEN PATTERN &HFFFF,grid2%
  A=MOUSE(0):x=MOUSE(5):y=MOUSE(6)
GOTO checkmouse
'make data for object
MakeImageData:
  Cordl=259*sml:Cord2=0:Cord3=259*sml+yl:Cord4=xl
  GET (Cordl,Cord2)-(Cord3,Cord4),object%
    WINDOW 2
    CLS
  PRINT "Image Filename:"
  INPUT Image$
  IF Image$="" THEN IDontWannaSave
```

```
CLS
  LOCATE 1,1:PRINT "Save as - (O)bject or (P)ut"
keloop:
  k$=INKEY$
  IF k$="" THEN keloop
  IF k$="o" OR k$="O" THEN obj
  'save as put data statements
  CLS
  PUT (1,1),object%
  Cord1=0:Cord2=0:Cord3=y1+1:Cord4=x1+1
  bytesneeded=(6+(Cord4-Cord2+1)*2*INT((Cord3-Cord1+16)/16)*depth)
  bytesneeded=(bytesneeded/2)-1
  GET (Cord1,Cord2)-(Cord3,Cord4),object%
  count=INT(bytesneeded/8)
  extra=bytesneeded MOD 8
  BN=bytesneeded
  IM$=Image$
    CHDIR "df0:"
    OPEN Image$ FOR OUTPUT AS 1
  w$=IM$+":"
    PRINT #1,w$
  w$="DIM "+IM$+"%("+RIGHT$(STR$(BN),LEN(STR$(BN))-1)+")"
    PRINT #1,w$
  w$="FOR X=0 TO"+STR$(BN)
    PRINT #1,w$
  w$="READ A$:A=VAL("+CHR$(34)+"&H"+CHR$(34)+"+A$)"
    PRINT #1,w$
  w$=IM$+"%(X)=A:NEXT:RETURN"
    PRINT #1,w$
  IF count=0 THEN extraloop
  FOR y=0 TO count-1
    FOR x=0 TO 7
      s$=s$+HEX$(object%(x+y*8))+","
    NEXT x
  s$="DATA "+LEFT$(s$,LEN(s$)-1)
  PRINT #1,s$
  s$=""
  NEXT y
extraloop:
  FOR x=0 TO extra
    s$=s$+HEX$(object%(count*8+x))+","
  NEXT x
  s$="DATA "+LEFT$(s$,LEN(s$)-1)
  PRINT #1,s$
  CLOSE 1
  s$=""
  PRINT "Load or Merge -";Image$;"-"
  PRINT "Press any key"
kelop:
  k$=INKEY$:IF k$="" THEN kelop
IDontWannaSave:
  WINDOW 1
  A=MOUSE(0):x=MOUSE(5):y=MOUSE(6)
GOTO checkmouse
'save as object
obj:
  CLS
  PUT (0,0),object%
  Cord1=0:Cord2=0:Cord3=y1-1:Cord4=x1-1
  bytesneeded=(6+(Cord4-Cord2+1)*2*INT((Cord3-Cord1+16)/16)*depth)
  bytesneeded=(bytesneeded/2)-1
  FOR xsp=0 TO bytesneeded
    object%(xsp)=0
  NEXT
  GET (Cord1,Cord2)-(Cord3,Cord4),object%
  'save as sprite?
  'if yes then set sprite variable and goto next question
    CLS
    PRINT "Save as sprite (Y/N)"
  keyL:
    k$=INKEY$
    IF k$="" THEN keyL
    IF (k$="Y" OR k$="y") AND depth=2 AND y1<17 TH
  EN sprit=25:GOTO ContSpr
  'line above is a continuation of the previous line
    sprit=24
  ContSpr:
    'object data statements?
    CLS
    PRINT "Object data statements (Y/N)"
  key:
    k$=INKEY$
    IF k$="" THEN key
    IF k$="y" OR k$="Y" THEN o=1
    'first make binary file then BASIC data file
  OPEN Image$ FOR OUTPUT AS 1
    PRINT #1, MKL$(0); 'ColorSet
    PRINT #1, MKL$(0); 'DataSet
    PRINT #1, MKI$(0);MKI$(object%(2)); 'depth
    PRINT #1, MKI$(0);MKI$(object%(0)); 'width
    PRINT #1, MKI$(0);MKI$(object%(1)); 'height
    PRINT #1, MKI$(sprit);
    PRINT #1, MKI$(dep-1);  'planePick
    PRINT #1, MKI$(0);  'planeOnOff
    FOR i=3 TO bytesneeded
      PRINT #1, MKI$(object%(i));
    NEXT i
   IF sprit=25 THEN PRINT #1,MKI$(&HFFF);MKI$(&HF);MKI$(&HF0);
    CLOSE 1
  IF o=1 THEN objd
GOTO IDontWannaSave
'Convert binary data to BASIC data statements
'This routine is taken from the
'Nov. '88 Ahoy!'s AmigaUser: Amiga Toolbox
'by Micheal R. Davila
objd:
  OPEN Image$ FOR INPUT AS 1
  obj$=INPUT$(LOF(1),1)
  CLOSE 1
  size=LEN(obj$):ps=1
  OPEN Image$ FOR OUTPUT AS 1
    PRINT #1,Image$+":"
    PRINT #1,"FOR ";Image$;"=1 to";STR$(size)
    PRINT #1,"read a"
    PRINT #1,Image$+"$="+Image$+"$+chr$(a)"
    PRINT #1,"NEXT:RETURN"
      WHILE (ps<=size)
       PRINT #1,"DATA ";
       FOR i=1 TO 6
         PRINT #1,ASC(MID$(obj$,ps,1));
         IF i=6 OR ps=size THEN
           PRINT #1,CHR$(13)
         ELSE
           PRINT #1,",";
         END IF
         ps=ps+1:IF ps>size THEN leave
       NEXT i
     leave:
   WEND
   CLOSE 1
  CLS
  PRINT "Done! LOAD or MERGE -";Image$;"-."
  PRINT "      Press any key"
  KeeLoop:
  k$=INKEY$
  IF k$="" THEN KeeLoop
GOTO IDontWannaSave
'translate C-64/128 sprite?
TranslateSprite:
  LOCATE 10,5
  PRINT "Want to translate sprite? (Y/N)"
KKloop:
  k$=INKEY$
  IF k$="" THEN KKloop
 IF k$="n" OR k$="N" THEN CLS:RETURN
  CLS
  sa=x:sy=y
  LOCATE 8,13
  PRINT "Is sprite in"
  LOCATE 9,13
  PRINT "Multicolor (Y/N)"
Kloop:
  k$=INKEY$
  IF k$="" THEN Kloop
  IF k$="Y" OR k$="y" AND depth>1 THEN m=1:GOTO HD
  m=0
HD:
  CLS
  LOCATE 8,12
  PRINT "Are data statements in"
  LOCATE 9,12
  PRINT "(H)ex or (D)ecimal"
Kloopa:
  k$=INKEY$
  IF k$="" THEN Kloopa
  IF k$="H" OR k$="h" THEN h$="&H":GOTO StartTranslate
  h$=""
'translate the sprite
StartTranslate:
  RESTORE SpriteData
```

```
  CLS
  FOR x=0 TO 20
    FOR y=0 TO 2
      READ b$
      b=VAL(h$+b$)
        FOR z=7 TO 0 STEP -1
          d(z)=b AND 2^z
        NEXT
      IF m=1 THEN GOSUB MULTI 'If multicolor
      IF m=0 THEN GOSUB SINGLE 'If single color
    NEXT
    PRINT
  NEXT
  FOR x=0 TO 20
    FOR y=0 TO 23
      np=POINT((259*sml)+y,x)
      LINE(y*8+1,x*8+1)-(y*8+7,x*8+7),np,BF
    NEXT
  NEXT
  x=sa:y=sy
  RETURN
'Multicolor plot subroutine
MULTI:
  k=7
  FOR Z1=0 TO 7
    IF d(k)=0 AND d(k-1)=0 THEN
    PSET ((259*sml)+Z1+(y*8),x),0
    Z1=Z1+1
    PSET ((259*sml)+Z1+(y*8),x),0
  END IF
  IF d(k)<>0 AND d(k-1)=0 THEN
    PSET ((259*sml)+Z1+(y*8),x),1
    Z1=Z1+1
    PSET ((259*sml)+Z1+(y*8),x),1
  END IF
  IF d(k)=0 AND d(k-1)<>0 THEN
    PSET ((259*sml)+Z1+(y*8),x),2
    Z1=Z1+1
    PSET ((259*sml)+Z1+(y*8),x),2
  END IF
  IF d(k)<>0 AND d(k-1)<>0 THEN
    PSET ((259*sml)+Z1+(y*8),x),3
    Z1=Z1+1
    PSET ((259*sml)+Z1+(y*8),x),3
  END IF
  k=k-2
  NEXT
  RETURN
'singlecolor plot subroutine
SINGLE:
  k=7
  FOR Z1=0 TO 7
    IF d(k)=0 THEN PSET ((259*sml)+Z1+(y*8),x),0
    IF d(k)<>0 THEN PSET ((259*sml)+Z1+(y*8),x),1
    k=k-1
  NEXT
  RETURN
'C-64 sprite DATA to be translated
SpriteData:
 DATA 0F,80,,10,47,,23,22,,2E,22,,7F
 DATA FF,80,FF,FF,E0,FF,1,F0,FE,BA
 DATA F8,54,BA,55,FF,1,FF,FF,B9
 DATA FD,7F,76,FC,3E,E7,78,1,DB,80,3,81
 DATA C0,7D,,BE,D6,,6B,92,,49,92,,49
 DATA D6,,6B,7C,,3E,,F
```

DEMO

```
 'A VERY SIMPLE DEMO
 'BY M.C.
 'translated with the graphic editor
 'used sprite data in program.
 GOSUB SETUP
  FOR X=0 TO 312
  R=RND*5+3
  LINE (X,180)-(X,180-R),RND*1+4
  NEXT
 LOOP:
  LOCATE 1,11:PRINT "*OLD SPRITE BUGGY*"
  FOR X=0 TO 320
   PUT (X,149),BUGGY.O%,PSET
  NEXT X
  LOCATE 1,11:PRINT "*NEW SPRITE BUGGY*"
  FOR X=0 TO 320
   PUT (X,149),BUGGY.N%,PSET
  NEXT
 GOTO LOOP
 SETUP:
   SCREEN 1,320,200,4,1
   WINDOW 2,"VERY SIMPLE.DEMO",,0,1
   FOR X=0 TO 15
   READ R,G,B:PALETTE X,R/15,G/15,B/15
   NEXT
   DATA 0,0,0
   DATA 15,15,15
   DATA 13,0,0
   DATA 15,6,0
   DATA 0,9,0
   DATA 3,15,1
   DATA 0,0,15
   DATA 2,12,13
   DATA 15,0,12
   DATA 10,0,1
   DATA 9,5,0
   DATA 15,12,10
   DATA 15,15,0
   DATA 12,12,12
   DATA 8,8,8
   DATA 4,4,4
 BUGGY.O:
 DIM BUGGY.O%(186)
  FOR X=0 TO 186
   READ A$:A=VAL("&H"+A$)
   BUGGY.O%(X)=A
  NEXT
   DATA 1A,17,4,0,0,7C0,0,823
   DATA 8000,1191,0,1711,0,3FFF,C000,7FFF
   DATA F000,7F80,F800,7F5D,7C00,2A5D,2A80,7F80
   DATA FF80,7FDC,FE80,3FBB,7E00,1F73,BC00,ED
   DATA C000,1C0,E000,3E80,5F00,6B00,3580,4900
   DATA 2480,4900,2480,6B00,3580,3E00,1F00,0
   DATA 0,0,0,0,0,0,0,0
   DATA 0,0,0,0,0,0,0,0
   DATA 0,0,0,0,0,0,0,0
   DATA 0,0,0,0,0,0,0,0
   DATA 0,0,0,0,0,0,0,0
   DATA 0,0,0,0,0,0,0,0
   DATA 0,0,0,0,0,0,0,0
   DATA 0,0,0,0,0,0,0,0
   DATA 0,0,0,0,0,0,0,0
   DATA 0,0,0,0,0,0,0,0
   DATA 0,0,0,0,0,0,0,0
   DATA 0,0,0,0,0,0,0,0
   DATA 0,0,0,0,0,0,0,0
   DATA 0,0,0,0,0,0,0,0
   DATA 0,0,0,0,0,0,0,0
   DATA 0,0,0,0,0,0,0,0
   DATA 0,0,0,0,0,0,0,0
   DATA 0,0,0
 BUGGY.N:
 DIM BUGGY.N%(186)
  FOR X=0 TO 186
   READ A$:A=VAL("&H"+A$)
   BUGGY.N%(X)=A
  NEXT
  RETURN
   DATA 1A,17,4,0,0,0,0,0
   DATA 0,0,0,0,0,0,0,0
   DATA 0,0,0,0,0,0,80,0
   DATA 180,1C,80,3B,0,73,8000,ED
   DATA C000,1C0,E000,80,4036,800,400,800
   DATA 400,800,41B,800,400,0,0,0
   DATA 0,0,0,7C0,0,820,0,1010
   DATA 0,1010,0,3FFF,C000,7FFF,F000,7F80
   DATA F800,7F00,7C00,2A00,2A80,7F80,FF80,7FC0
   DATA FE80,3F80,7E00,1F00,3C00,0,0,0
   DATA 0,3E00,1F00,6300,31A0,4100,2080,4100
   DATA 2080,6300,31BF,3E00,1F00,0,0,0
   DATA 0,0,0,3,8000,1,1,1
   DATA 0,3FFF,C000,7FFF,F000,7F80,F800,7F5D
   DATA 7C00,2A5D,2A80,7F80,FF80,7FDC,FE80,3FBB
   DATA 7E00,1F73,BC00,ED,C000,1C0,E000,3E80
   DATA 5F00,6B00,3580,4900,2480,4900,2480,6B00
   DATA 3580,3E00,1F00,0,0,0,0,0
   DATA 0,3,8000,181,0,701,7,0
   DATA 0,0,0,0,2,0,0,0
   DATA 0,0,3F,0,0,0,0,0
   DATA 3A,0,0,0,0,3E00,1F01,6B00
   DATA 3580,4900,2480,4900,24B6,6B00,3580,3E00
   DATA 1F00,0,1B
```

Software and Applications for the

Welcome to another chapter in the saga of business, utility, and graphic reviews, tips, and general information for Amigaphiles. While recovering from Thanksgiving, and anticipating Christmas, I had the opportunity to read a few good books—Amiga-oriented of course.

Abacus, North American publisher of Data Becker titles such as *Professional DataRetrieve* and *BeckerText,* also distributes their line of informative, quality books. Their latest releases include *AmigaDOS Inside & Out, Amiga System Programmer's Guide,* and *Amiga Disk Drives Inside & Out.*

Of these titles, two have relevance to this column. *Disk Drives* contains useful, non-technical information on the Workbench and the CLI. Even more information is provided in *AmigaDOS*, which covers the CLI, devices, the disk operating system, multitasking, and Workbench 1.3 (!) in detail. Again, the text is written for non-technical readers.

The general information contained in these titles works as a catalyst or booster, helping you increase your proficiency (and efficiency) with AmigaDOS and the Workbench interface. Once accustomed to icons, you can move on to tap the hidden powers of the Command Line Interface. These titles help to make that as painless, and as exciting, as possible.

The tricks and tips mentioned go directly to your bottom line, adding useful tools to your repertoire. Whether instituted as batch files or part of the startup sequence, these tips make all applications run smoother, more trouble-free.

For small businesses, where a few extra hours spent on a job can mean the difference between profit or loss, these books provide an invaluable resource.

Beginning with basics about 3.5" floppies and the way the Amiga formats a disk, *Disk Drives* is ideal for beginners. The need for backup copies is made early on, reinforcing the title's focus as a working solution to elementary and more advanced problems or questions.

The Workbench section identifies the interface's strong and weak points (ease of use and incomplete display of all files respectively). It goes further by discussing the advantages and ways to use the RAM drive—one of the most useful, least understood, and least utilized aspects of the Amiga.

Both methods of file deletion are covered (Empty Trash and Discard); so is the Info menu option procedure for making files deletable or nondeletable.

Launching an application, called autostarting in the book, describes three ways to open a file and an application. First there is the standard double click on a file, which calls the originating program. The last two methods, both making different uses of the SHIFT key, allow you to select a file and the application you want it to load with. This means you can create a file with *Photon Paint*, but have *Deluxe Paint* II launch it.

Chapter 3 clearly spells out the advantages of using the CLI (Command Line Interface) over the Workbench. It also identifies the additional work needed to access all of the Amiga's power.

While this chapter is more technically oriented, its contents still remain well within a layman's grasp. Spending time with this section will increase your Amiga proficiency manyfold—especially if you've been hanging around the Workbench too long. Topics of interest explained here include commands to protect files (read/write/execute/deleteable), disk info, and the diskdoctor program (for corrupt data recovery attempts).

Use of the RAM disk with CLI is discussed, with special instructions for 512K machines. Procedures to create batch CLI files (script files in AmigaDOS parlance) are touched upon. So are ways to reduce housekeeping (disk maintenance) chores via the Assign command.

Tips on deleting files to increase disk storage capacity provide secure knowledge that you aren't going to remove files critical to the successful completion of a vital task—and cause a data loss disaster. Other CLI tips include lists of keyboard shortcuts and command abbreviations.

The balance of the book deals with BASIC programming, DOS functions, and increasingly technical material. The only exception is the chapter on DOS error messages. This section explains the cryptic numeric messages received when something is awry in Workbenchland or CLIdom.

One other angle must be mentioned. Appendix C lists a copy program (Deepcopy) that handles high speed copies, Atari/IBM/Macintosh formats, and copy protected disks. It is function key driven, with enough options to tailor the copy routine to the type or nature of disk to be copied. The program is also available on disk, $14.95 option. *Amiga Disk Drives Inside & Out* retails for $29.95.

If *Disk Drive* can be considered the appetizer, *AmigaDOS Inside & Out* is no doubt the main course. Starting again with the basics, *AmigaDOS* goes into greater detail than its counterpart.

Working primarily from the CLI, the book also introduces the Shell upgrade, as provided in Workbench 1.3. Other differences between 1.2 and 1.3 are noted by chapter differentiation, parenthetical text in the body of a paragraph, boldfaced margin text, and boldfaced headers.

Once directories are briefly explained, CLI argument templates and the method for quitting the CLI are covered.

Small Businessman By Ted Salamone

Chapter Two digs into all CLI commands—and their syntax, explanations, and uses. 1.3-specific commands are separated for clarity—the same reason for dividing the chapter into Disk & File Management, System Commands, Script File Commands, and The Editors.

The first section of Chapter Two covers commands from Format and FFS (FastFile System for hard disk formatting) to List, Join, Protect, and Diskchange (for Amigas with 5.25" drives).

System Commands include Run, ChangeTaskPri, AddBuffers, Stack, Mount, and BindDrivers among others. Where usage under 1.2 and 1.3 is identical, the book so notes).

The Script File Commands section details batch files created with ED, or any ASCII capable word processor, and run with the Execute command. Besides Execute, commands include Echo, If/Else/EndIf, Ask, Wait, and Version. There are others.

Two editors are provided. ED is a full screen editor with up/down and left/right scrolling capabilities controlled by the cursor keys. Edit, on the other hand, is a simple line editor. Where ED can display and manipulate a full screen of data at a time, Edit can only work on one line at a time. Each has its advantages, as outlined in the book. Parameters, file manipulation, and text editing procedures are described in a concise, authoritative manner.

Chapter Three is titled Devices. It discusses DFx (floppy and hard drives), RAM (RAM drive), PAR (parallel port), SR (serial port), PRT (printer), CON (console), and RAW (a special method of transferring data to the CON).

Chapter Four is reserved strictly for Workbench 1.3. It discusses improvements over 1.2, namely existence of the Shell, the FastFile System, new device handlers, new/improved CLI commands, and the ability to boot from devices other than DF0 or DH0, among others.

FF is a command that activates FastFonts, a Microsmiths program which accelerates text displays by up to 20%. Lock write protects designated partitions on a hard drive, while RAD (recoverable RAM disk) creates a RAM drive that survives warm boots, and even most encounters with the Guru. Perhaps the most promising new command is AUX, a serial port command that allows multiuser operation. Just think, the Amiga can now do multitasking, multiuser sessions—mostly the domain of minicomputers and above.

Chapter Five is a small treasure trove of "CLI Tricks and Tips." While a few have been around for some time, others are relatively new—testament to the dedication of the authors in providing substantial, up to date information. (For chapter excerpts, catch upcoming *Exec File* columns.)

Script files are the topic of Chapter Six. These batch files provide unbelievable flexibility and customization to your Amiga setup. Simple ASCII files, they can be executed from CLI or entered as part of the Amiga's automated Startup-Sequence (SS).

If you routinely use a specific set of applications, install special devices (RAM drive perhaps), or otherwise habitually modify your working environment, then the Startup-Sequence route is best for you. That way, you won't have to repeat a series of identical tasks or commands each time you reboot.

On the other hand, you may use too wide a variety of applications, etc., to predict your startup needs. In that case, you can build a series of script files, executing them as needed. Either way, script files are a real productivity enhancer.

The last general chapter covers multitasking—ways to maximize its potential and ways to put it to use. Then there are more technical sections of AmigaDOS internals, creation of CLI commands, program listings (available on an optional disk for $14.95), and a reference section covering the CLI, Shell, ED and Edit features. *AmigaDOS Inside & Out* retails for $19.95. It's worth every cent, and then some.

AREXX—SON OF T. REX?

Not quite, but it makes an interesting subheading. Actually, ARexx is the (multitasking) Amiga version of REXX, a high-level language that facilitates creation of operating system extensions, custom applications, and integrated systems sharing common procedures.

A product of William S. Hawes, it is derived from Colishaw's *The REXX Language: A Practical Approach to Programming.* Normally programs are not covered in this column, but this is an exception since it is very similar to the high level languages found in professional (relational) data-

For more information on products profiled in this article, contact the appropriate companies directly:

Ashton-Tate
20101 Hamilton Avenue
Torrance, CA 90502
Phone: 213-329-8000

Broderbund Software
17 Paul Drive
San Rafael, CA 94903
Phone: 415-492-3200

Timeworks, Inc.
444 Lake Cook Road
Deerfield, IL 60015
Phone: 312-948-9200

Spinnaker Software
One Kendall Square
Cambridge, MA 02139
Phone: 617-494-1200

bases. As a matter of fact, *Microfiche Filer Plus* from Software Visions (see review beginning on page 56) gets its programmability from ARexx.

ARexx requirements are as follows: any 256K Amiga with KS/WB 1.1, 1.2, or 1.3. A single floppy drive is sufficient. Though it can be run from the Workbench, it is best addressed through CLI or an editor (word processor, etc.).

A source code debugger is included to help straighten out the kinks in your custom code. ARexx runs in interpreted mode—that is, nothing is compiled. Source code is also readily visible to clients, an important item to consider. The importance of this is somewhat negated by the fact that most ARexx uses will be extensions to commercially available software, thereby lessening the need for unlistable code. (See the review of *Professional DataRetrieve* beginning on page 58 for more on this subject.)

Installation is a snap; learning is aided by program examples, detailed yet clear explanations, and a comprehensive Index/Table of Contents duet. (If you are not familiar with programming, the learning curve will be steeper, of course.)

For developers and other types who build custom applications with traditional database products, ARexx will be very familiar, yet different. For example, data types do not have to be predefined (numeric, text, etc.); variables likewise need not be predefined.

ARexx "grafts" itself to any program, commercial or otherwise, which allows you to call ARexx. That's how it can be used to extend currently available programs.

The big A loads as a library accessible from any point in the system; therefore multiple file copies do not have to be loaded into RAM. This portrays another aspect of the program's technique for expertly handling memory usage, freeing RAM when a task is done.

Over 75 integral functions such as ADDLIB (add library), COMPRESS (remove blanks or designated characters from a string), and TRANSLATE (replace selected characters in a string) are included. Complete error message listings, with causes, are in the manual.

Whether you develop custom applications or extend commercially available ones for yourself or clients, ARexx is the perfect way to get the job done. Powerful, flexible, and not overwhelming, ARexx can add extra mileage, features, and benefits. System integrators take note: ARexx works best as "the glue that binds" disparate programs into a total solution.

For a first crack, this is a very good implementation of REXX. The author openly discusses REXX features not implemented, promising them for a later release. Fuzz, decimal precision (up to 14 digits here), and notation issues comprise the omissions or partial implementations.

The manual also covers Amiga specific extensions which add a recognizable degree of power and flexibility to Arexx. A quite useful tool. □

MS-DOS MEETS AMIGADOS

Continued from page 16

desktop, outliner, word processor, spell checker, spreadsheet, graphics, database, and communications modules.

This is an extremely cost effective package because aside from the sheer number of applications involved, it includes 3.5" and 5.25" disks, is not copy protected, and has a $25.00 off CompuServe offer bundled inside.

The manual is comprehensive, adequately illustrated, and well laid out. It takes complete novices through nearly all steps needed to configure the PC (add a CONFIG.SYS file for example) and make backup disks. It even describes hardware and the general application categories. Due to this attention to detail, and warm "computerside" manner, "8" is the first integrated application ideal for beginners. (Especially Amiga users not familiar with the MS-DOS world.)

There is online Help, a mouse IS supported, function keys are predefined, and macros are possible.

dBASE III and *Lotus 1-2-3* spreadsheet files can be imported or exported. Since a database and a word processor are included, mail merge is a natural. Better yet, the outliner makes it easy to sketch out projects, term papers, speeches, etc. The desktop organizer includes an appointment calendar, To Do List, and an address book.

The WP features header and footer control, automatic Table of Contents generation, cut/paste, search/replace, justification, and editing functions.

The spell checker, working from a 100,000 word file, identifies errors, makes suggestions, and automatically substitutes corrections.

The spreadsheet, up to 32,768 rows by 10,000 columns, has over three dozen mathematical and logical operators (exponential, =, if/true/false), functions (log, variance, preset value, etc.), and lookup commands (choose, horizontal, and vertical).

Modem madness includes 300-1200 baud support, XON/OFF protocol capability, function key use, and complete control over modem and terminal settings. Macros, autodial capability, and multiple terminal emulation modes (Televideo 920, DEC VT 100, and IBM 3101) round out this menu option.

Graphics can be created with database or spreadsheet data, then passed to the word processing module. Bar and pie charts and area, point, and line graphs are supported.

Database features include six operators (=, >, etc.), multifield searches, five mathematical operator capability, and over three dozen functions (square root, cosine, AND, IF, value, at, pi, random, etc.). The internal reporting functions are supplemented by the word processor and its enhanced editing and layout features.

Add the ability to access MS-DOS from within the application, and "8" shines like a first class star.

Next month we'll continue our exploration of MS-DOS software. □

The April issue of AmigaUser will go on sale March 7.

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   a. A500 b. A1000 c. A2000 d. other: ____________
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   a. 512K b. 1 meg c. over 1 meg
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